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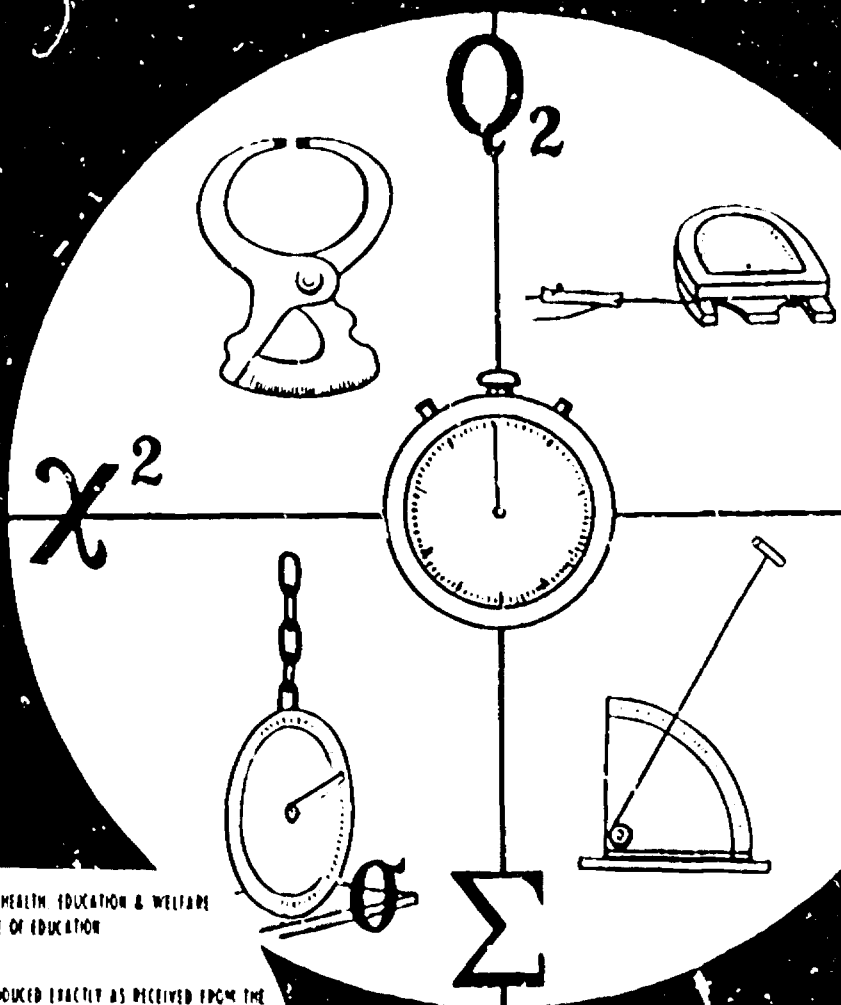
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ABSTRACT

This document is a compilation of completed research in the areas of health, physical education, recreation and allied areas for the year 1965. It is arranged in three parts. Part I consists of an index, showing cross references for all of the listings in parts II and III. Part II consists of a bibliography, listing published research and the periodical reviewed. Part III consists of abstracts of unpublished masters and doctoral theses for forty-eight (48) institutions offering graduate programs of health, physical education, recreation and allied areas. There is a total of 430 bibliographical references to the journals, and 545 references to masters and doctoral theses. Abstracts are provided for a majority of the theses. (HB)

**Volume 8**  
**1966**

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INCLUDING INTERNATIONAL SOURCES

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**Volume 8      1966 EDITION**  
**covering research completed in 1965**

Edited by **ALFRED W. HUBBARD** and **RAYMOND A. WEISS**  
for the **RESEARCH COUNCIL** of the **AMERICAN ASSOCIATION**  
**FOR HEALTH, PHYSICAL EDUCATION, AND RECREATION,**  
a department of the **National Education Association**

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## INTRODUCTION

This compilation lists research completed in the areas of health, physical education, recreation, and allied areas during 1965. It is arranged in three parts:

I. Index. In this section, cross references are given for all the listings in Parts II and III. References are arranged under the subject headings, which are in alphabetical order. Instructions for using the index are given at the top of page I.

II. Bibliography. This is a listing of published research, citing articles published in 89 of the 172 periodicals reviewed by the Committee for Completed Research. The periodicals reviewed are listed on pages 128 and 129.

III. Theses Abstracts. Unpublished Masters' and Doctors' Theses for 48 institutions offering graduate programs of health, physical education, recreation, and allied areas. Institutions reporting are listed on page 130. Most references are accompanied by abstracts of the research and all are numbered in alphabetical order. Names of institutional representatives sending in these abstracts are indicated in parentheses after the name of the institution.

Theses abstracts are sent in by the institutional representatives, and are then organized, indexed, and edited by the chairmen of the Committee for Completed Research. Universities and colleges are encouraged to submit abstracts of theses completed at their institutions in the year 1966 for inclusion in the next issue of Completed Research. Material should be sent to the chairmen of the Committee on Completed Research.

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## PART I—INDEX

This Index enables the reader to refer to the items of completed research listed in Parts II and III. Research topics are arranged in alphabetical order. The reference numbers following each topic correspond to the listings of completed research dealing with that topic. The capital letter B indicates a reference to be found in the Bibliography (Part II); the capital letter T indicates a reference to be found in the Theses Abstracts (Part III).

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430. ZOBL, E. G.; TALMERS, F. N.; CHRISTENSEN, R. C.; and BAER, L. J. "Effect of Exercise on the Cerebral Circulation and Metabolism." Journal of Applied Physiology 20: 1289-93; Nov. 1965.

## PART III--THESES ABSTRACTS

University of Alberta, Edmonton, Alberta, Canada

(M. L. Howell)

1. CARRON, Albert V. Complex Motor Skill Performance Under Conditions of Externally Induced Stress. M.A. 1965. 94 p. (W. R. Morford)

Sixty high-anxious and 60 low-anxious male freshman students were assigned equally to control, stress-early, and stress-late groups. The learning task consisted of 70 trials on a stabilometer of 20 sec. each. All trials were under control conditions except that the stress-early group had a shock stressor on Trials 4 to 6 and the stress-late group were shocked on Trials 65 to 67. The high- and low-anxious groups did not differ significantly in the amount learned and the shock had no effect on the amount learned but the high- and low-anxious groups differed significantly in their final levels of performance. The shock-early condition produced a significant impairment in the high-anxious group and none in the low-anxious group but the shock-late condition produced almost equal impairment in both anxiety groups.

2. DAHLGREN, Wendy J. The Effect of Chronic Exercise on the Weight of Selected Internal Organs of Young Rats. M.A. 1965. 53 p. (R. B. J. Macnab)

Sixty male albino (Wistar) rats approximately 5 weeks old were assigned randomly to a control group, a wet group (dipped in swim tanks on exercise days), or a swim group that swam up to 15 minutes 5 days/week with up to 5 percent of body weight added to their tails. All rats were fed a stock diet ad libitum, confined in small individual cages, and weighed weekly. Fifteen rats were eliminated. All rats were sacrificed at the end of the 5-week experimental period and weighed. The hearts, livers, kidneys, adrenals, spleens, and testes were dissected and weighed with the weight recorded both in absolute terms and relative to final body weight. Chronic exercise had no effect on the body weight or internal organ weights of the rats. Absolute weight of the heart and liver correlated highly with final body weight but correlations of the other organs with final body weight and intercorrelations between organs were low and not significant.

3. GREEN, Howard J. A Comparison of the Work Capacity of the Urban and Rural Secondary School Populations in the Province of Alberta as Measured by The Astrand Submaximal Bicycle Ergometer Test. M.Sc. 1965. 105 p. (M. L. Howell)

On the basis of geographical, social, and economic criteria, 45 representative city, town, and village schools were chosen. A 3 percent random sampling was selected from enrollment lists. The Astrand submaximal test of work capacity was administered to 809 urban and 108 rural students and maximal O<sub>2</sub> intake predicted from a nomogram. Urban and rural males and females differed significantly when work capacity was expressed in liters/min. but not in terms of ml./kg. of body weight. The correlation between measured maximal O<sub>2</sub> uptake and work performed was .68 for both males and females. A correlation between work performed and average knee extensor strength of .51 was found for males only.

4. HYDE, Rodney C. The Astrand-Rhyming Nomogram as a Prediction of Aerobic Capacity for Secondary School Students. M.Sc. 1965. 88 p. (M. L. Howell)



The Astrand-Rhyming predicted mean maximal O<sub>2</sub> consumptions obtained on the actual Astrand test for females but underestimated for males at this age and necessitated a correction factor. The nomogram differentiated satisfactorily between individuals in widely different states of training but not between individuals in approximately the same state of training. Males at all ages were superior to females in mean aerobic capacity. Alberta students appeared inferior to Swedish children in work capacity but compared favorably with children of the same age in other areas. The aerobic capacity of females decreased significantly over the summer vacation while that for males showed no change.

5. KADATZ, Dennis M. The Relationship of Weight Distribution and Charging Time for Football Linemen. M.A. 1965. 54 p. (W. D. Smith)

Charging and pulling RT and MT were measured with 35, 20, and 5 percent of the body weight on the hand. Charging RT was significantly faster for each successive increase of body weight on the hand. Charging MT was significantly faster for 35 percent weight compared to 5 percent. Pulling RT to the left was significantly faster with 5 and 20 percent weight on the hand over 35 percent. Pulling RT to the right was significantly faster with 5 percent compared to 35 percent. But pulling MT to the right and left showed no significant difference for any weight distribution.

6. MACGILLIVARY, William W. The Relationship of Certain Underlying Capacities to Ability Level in a Complex Gross Motor Skill. M.A. 1965. 45 p. (W. R. Morford)

Hockey players were divided into superior and inferior groups on the basis of two independent ratings by experts. Total body reaction time and movement time, peripheral vision, and depth perception were tested. No significant differences were found between the groups for the capacities tested. Quick reaction and speed of movement were independent except that choice reaction time and choice movement time were somewhat related. Simple movement time showed a fairly high and significant correlation with hockey ability but all other correlations between capacities and the criterion were low and not significant. Considerable improvement was evident during reaction time and movement time practice trials, but no significant improvement occurred during test trials.

7. MESSIER, Victor R. The Effect of Repetitive Tetanic Stimulation on Muscle Strength and Fatigue in Healthy Subjects. M.Sc. 1965. 37 p. (M. Carpendale)

Ten male and 8 female volunteers were divided into a group (9) that underwent a daily 6-sec. tetanic contraction of the ulnar-innervated muscles of the non-dominant hand produced by faradic stimulation, a group (5) who exercised daily with a similar 6-sec. maximal voluntary isometric contraction, and a control group (4) who carried on their normal activity. The ulnar-innervated muscles of the dominant and non-dominant hands were tested initially and finally for grip tension, tetanic tension, Merton's tension, and fatigue-tension ratio. The measures on the dominant hand acted as an additional control. The subjects having faradic stimulation showed significant increases in grip tension and tetanic tension but the voluntary isometric exercise group showed no significant gain on any test. Current theories of strength development were discussed in relation to these findings.

8. PIAU, Robert J. A Comparison of Various Types of Boxing Gloves on the Basis of Certain Impact Measures. M.A. 1965. 32 p. (R. B. J. Macnab)



In this study 8-, 10-, and 12-oz. boxing gloves were fitted over a wooden fist at the end of a 3-ft. metal pendulum whose weight was maintained constant at 10.036 lb. The glove contacted an aluminum sheet at the end of its fall; the impact was picked up with a strain gauge, fed into an oscilloscope, and photographed. The energy absorbed by the glove was calculated from this. The impact absorption of foam rubber padding was superior to coarse hair padding in general. The 10-oz. glove with combined foam rubber and coarse hair padding absorbed more impact energy than the 12-oz. glove of the same type.

9. SEDGWICK, Anthony William. Some Aspects of the Relationships Between Resting, Exercise and Recovery Heart-Rates and Physical Fitness. M.A. 1965. 102 p. (R.B.J. Macnab)

The correlation between exercise heart rates and fitness tended to increase with work load and to some extent with duration of work in stationary cycling against light, moderate, and heavy resistance. The correlation between recovery heart rates and fitness tended to increase similarly with work load but decreased as the duration of recovery extended. Maximal heart rate, recovery heart rate following maximal heart rate, and rate of recovery correlated poorly with fitness. Resting heart rate correlated significantly with some fitness criteria but lower than exercise and recovery rates during submaximal work. Maximal O<sub>2</sub> intake, duration of work, and amount of work correlated significantly when the work load exhausted all subjects in less than 5 min.

10. SHAW, George S. The Relationship of Static Strength to Strength-In-Action. M.Sc. 1965. 48 p. (W. R. Morford)

Reaction times, movement times of horizontal adductive arm swings at 22.5°, 45°, 90°, and 112.5°, effective arm mass, and static strength at 0°, 45°, and 90° were measured on 50 male university freshmen. Correlations between cumulated movement time to 90° and strength/mass ratio at 0°, 45°, and 90° were not significant at the .05 level. Correlations between this movement time and static strength at 0°, 45°, and 90° were significant, but low, and intercorrelations between strength measures were significant. Static strength appeared more specific to the test position as sites of measurement were farther apart on the movement arc. Reaction time did not correlate significantly with speed of movement, static strength, or strength/mass ratio.

11. STOTHART, John Peter. Application to the Specificity Concept to Four Measures of Muscular Endurance. M.Sc. 1965. 50 p. (R.B.J. Macnab)

Maximum isometric strength was tested at 130° and 160° of knee extension for 42 university men who averaged 19.9 years of age, 69.9 in. in height, and 159.4 lb. in weight. Muscular endurance of the right quadriceps was tested at each angle with loads of 30 and 45 percent of maximum strength and one week between tests. The correlations between isometric strength and muscular endurance were low, negative. Component analysis and intercorrelations of muscular endurance measures showed that although an endurance component was common to all measures, a secondary "angle" component made the endurance measures specific to the angle of testing. Endurance was not specific to the load. Correlations between knee-ankle length were moderate but using these in partial correlations left the original endurance intercorrelations relatively unaltered.

12. WU, Kuei-Shou. Physical Education in the Republic of China From 1880 to 1965. M.A. 1965. 113 p. (H. J. McLachlin)

The available records were collected, translated, and summarized.

13. ZAHAR, Edward W. R. Reliability and Improvement With Repeated Performance of the Sjostrand Work Capacity Test. M. A. 1965. 118 p. (R. B. J. Macnab)

The test proved highly reliable although apprehension decreased the value of the first test. Improvement occurred with repeated trials but the cause—learning, training, or some other effect—was not determined. Ambient temperature shifted the pulse rate/work curve toward raised or lowered work capacity. The correlations of work capacity with age, height, and weight were significant, but so low that partialling them out was unnecessary for relatively homogeneous samples. Correlations of raw improvement with initial and final work capacity were not significant but differed significantly at the .01 level. Separating intra- and inter-individual differences from test-retest variances was only partially successful since variable measurement error was indeterminate.

Arkansas State College, State College, Arkansas

(L. J. Dowell)

14. ARMS, Orville Ray. The Professional Status of the High School Coach in Arkansas. M.S.E. 1965. 44 p. (L. J. Dowell)

Questionnaires were sent to 150 coaches in Arkansas regarding their professional status. The typical high school coach in Arkansas was a man 27 years old, had a bachelor's degree with a major in physical education and a minor in social studies, had 5 to 10 years experience, lettered in several sports in high school but only one in college, belonged to several professional organizations including the AEA, NEA, and ACA, had a salary of about \$4500, and taught physical education along with his coaching duties.

15. CALLAHAN, Harold. The Effect of Isometric Training and Rebound Tumbling on Performance in the Vertical Jump. M.S.E. 1965. 50 p. (L. J. Dowell)

Three groups of 14 freshman and sophomore men were equated on the basis of the average of their best Sargent Jump and one-step jump. One group participated in an isometric training program 5 days a week for 8 weeks while another group participated in a rebound tumbling program for the same period. The control group took part in a regular physical education class. All groups showed a significant gain in the Sargent Jump, with the isometric training group gaining significantly more than the control group.

16. DARBY, Jake. A Comparison of Results Obtained on the Arkansas State College Motor Fitness Test with Results of Selected Tests of Physical Abilities. M.S.E. 1965. 52 p. (L. J. Dowell)

The Arkansas State College Motor Fitness Test, The Brace Motor Ability Test, The Navy Standard Physical Fitness Test, and The Johnson Motor Educability Test were administered to 43 male students in 2 freshman physical education classes at Arkansas State College in order to determine various factors evaluated by The Arkansas State College Motor Fitness Test. Pearson product-moment correlations showed a marked relationship between the Arkansas State College Motor Fitness Test and the other tests.

17. HOLLAND, Gary Leon. A Study of Winning at Home and on the Road in Selected Collegiate Basketball Conferences and in Selected Major Independents in the United States. M.S.E. 1965. 54 p. (W. D. Black)

The scores of home and on the road games were secured for selected major conferences and independents for the 4-yr. period (1962-65). There was a significant difference between winning at home and on the

road. The 4-yr. average home court advantage for the conference was 7.93 points per game while for the independents it was 15.25 points per game. The 4-yr. average percentage of home wins for the conferences was .617 and for the independents was .694.

18. HOWELL, James Edward. The Effect of Exercise on Body Weight and Physical Fitness. M.S.E. 1965. 34 p. (L. J. Dowell)

Two groups of 8 white mice each of equal age and weight lived in small cages and received food and water ad libitum. The experimental group ran 15 min. daily in a squirrel cage for 9 weeks with the daily distance increasing regularly from 225 to 450 yd. Both groups were weighed and then swam to exhaustion with a 2-gram weight attached to the tail. The exercise program did not make a significant contribution to the development of physical fitness.

19. KELLER, Jim Ladd. History of Athletics at Arkansas State College. M.S.E. 1965. 124 p. (L. J. Dowell)

College and athletic records were incomplete, and reports of sports writers, publicity writers, and faculty members were inconsistent. The athletic program progressed unevenly in various sports under from 1 to 8 coaches and toward competition with larger and better colleges as scheduling involved progressively AIC, Southeastern Conference, outstanding independents, and the present Southland Conference teams.

20. McCLURE, Leon. A Study of Selected Factors in Administering an Intramural Program in "Class A" Schools in Arkansas. M.S.E. 1965. 66 p. (L. J. Dowell)

The review of authoritative literature was supplemented with questionnaire returns from 42 coaches and an interest check list completed by 109 male students in Nettleton High School. The program should be under the Department of Health and Physical Education and operated by a paid director with student assistants composing a board to direct the program. Awards should be inexpensive. Varsity lettermen should be ineligible in their sports but should officiate, along with students selected by the director. Health examinations should be required of participants. Students preferred basketball, baseball, touch football, riflery, tennis, outdoor track, softball, and bowling.

21. McKINNEY, Dorlis Johnson. A Comparison Between Women Physical Education Majors and Non-Majors in Selected Personal and Social Characteristics. M.S.E. 1965. 49 p. (L. J. Dowell)

To compare the personal-social characteristics of women physical education majors with non-physical education majors the Bell Adjustment Inventory was administered to 24 women physical education majors and 51 non-majors. Additional information was obtained from the permanent records of Arkansas State College. No difference was found between women physical education majors and non-majors in home adjustment, health adjustment, submissiveness vs. self-assertion, emotionality, hostility vs. friendliness, masculinity vs. femininity, or in grade point averages. Women physical education majors did as well academically and were as well adjusted personally and socially as other college women.

22. MEEKS, Dorothy A. A Comparison of Physically Fit and Physically Unfit Junior High School Girls. M.S.E. 1965. 54 p. (L. J. Dowell)

The AAHPER Youth Fitness Test was administered to 264 girls at Holman Junior High School, St. Ann, Missouri. The 27 girls who scored highest on the test were designated as the "fit group" and the 27 girls who scored lowest were designated as the "unfit group." These groups

were compared in academic achievement by grade point average, personality by the California Test of Personality, and Social Acceptance among their peer group by a sociometric design. The physically fit students had better personalities, made better grades, and were more socially accepted by their peers than the physically unfit students.

23. TAKACS, Robert. A Comparison of the Effect of Two Methods of Practice on Basketball Free Throw Shooting. M.S.E. 1965. 51 p. (L. J. Dowell)

Sixty male grade 8 students were divided into 3 matched groups by the Johnson Test of Motor Educability and an initial free throw shooting test. Group A shot 20 free throws at a small basket 5 days per week. Group B followed the same procedure using an official basket. Group C took part in a regular physical education class for the 4 weeks of the experiment. Then the subjects repeated the free throw shooting test. The small basket group showed a 37 percent gain in accuracy while the official basket group improved 29%, and the control group had a 9% loss. Free throw shooting at a small or a regulation basket produced a significant improvement over the 4-week period. Free throw shooting at a small basket produced significantly greater accuracy than no practice, but the other differences were not significant.

24. WILLS, Keith Clark. The Effect of Mental Practice and Physical Practice on Learning a Motor Skill. M.S.E. 51 p. (L. J. Dowell)

Sixty junior high school boys were divided into 3 equated groups on the basis of a test of passing a football with accuracy and the Johnson Motor Educability test. One group practiced 3 days per week for 5 weeks by taking 5 warm-up throws and then 30 passes at the target daily. The mental practice group read instruction sheets and then thought through the physical practice of throwing a football at the target. The control group participated in regular physical education classes. On the final football passing test, the physical practice group had a 50.4 percent gain in accuracy; the mental practice group had a 70 percent gain, and the control group had a 12 percent gain. The physical and mental practice groups had significant gains. The mental practice group increased significantly more in accuracy than the control group. The final differences between the physical and mental practice groups and between the physical practice group and control group were not significant.

25. YOUNG, Earlsine. A Comparison of Two Methods of Teaching Field Hockey to College Women. M.S.E. 1965. 58 p. (W. D. Black)

Two groups, 15 each, of freshman college women, were paired on the basis of motor educability, initial field hockey skill, and intelligence. One group was taught by the whole-part-whole method while the other group was taught by the part method in the teaching of field hockey for 6-1/2 weeks. The whole-part-whole method appeared to be more effective in terms of skill performance. However, there was no significant difference between the two methods in knowledge achievement.

University of Arkansas, Fayetteville, Arkansas

(H. B. Falls)

26. BITCON, Laurence E. Validation of a Four-Item Fitness Test and Norms for High School Boys in the State of Iowa. Ed.D. 1965. 59 p. (G. C. Moore)

A test consisting of pull-ups, 2-min. sit-ups, standing broad jump, and a 300-yd. shuttle run was validated against the AAHPER Youth Fitness Test. Validity and reliability coefficients were .934 and .961 respectively. Norm tables for Grades 9-12 were constructed.

27. BURKS, Arvil W. Gains in Social Adjustment of Coeducational Classes and Segregated Classes in Physical Education. Ed. D. 1966. 67 p. (E. T. Hendricks)

Social adjustment gains of freshmen students in coeducational physical education classes were compared with those in segregated classes in a private college. The classes were in tumbling, trampoline, folk and square dancing, soccer, and volleyball. The Washburne Social Adjustment Inventory was used to measure social adjustment. No statistically significant differences were found between the classes either on total Washburne score or on any of the subtests.

28. FARRELL, Lon R. An Analysis of the Problems of Head High School Football Coaches in the State of Kansas. Ed. D. 1965. 211 p. (E. T. Hendricks)

A stratified random sample including 50 percent of the head coaches was asked to complete a problems checklist and a personal data sheet. Of the sample, 92 percent complied. The problems were analyzed in regard to professional preparation, college attended, school size, size of community, subjects taught, assistant coaches, and coaching experience. Results indicated that coaching tenure was relatively short (most coaches left coaching before 9 years), coaches also taught classroom subjects, most coaches began as assistants, and facility problems were the most difficult. Other difficult problems in order were equipment, medical, and personnel.

29. JOHNSON, Clarence J. Personality Traits Affected by High School Football as Measured by the Guilford-Zimmerman Temperament Survey. Ed. D. 1966. 125 p. (E. T. Hendricks)

The effects of a season of football on personality were investigated in 340 high school boys. The boys were compared with non-football players. No changes were noted in junior and senior players, but sophomore players showed a change in ascendance and objectivity.

30. McLANE, L. Patrick. A Comparison of Lateral Starting Times with Varying Body Position and Initial Step. Ed. D. 1966. 48 p. (G. C. Moore)

Lateral starting times under conditions of open-step and cross-over step each with two ranges of knee flexion were investigated in 40 college males. Direction of movement was also considered. Reliability coefficients for the 8 combinations of type of step, amount of knee flexion, and direction of start were high, .73 to .93. Multiple linear regression techniques were used to compute an analysis of covariance. Concomitant variables were age, height, weight, body type, habitual first step, experience in sports, and lateral dominance of hand, eye, and foot. No statistically significant differences were found among the methods of starting.

Brigham Young University, Provo, Utah

(L. Holbrook)

31. BEAMAN, Helen Keith. Elements from the Life of Elizabeth I of England. M. A. in Physical Education. 1963. (L. Holbrook)

This dance production was prepared to support the hypothesis that dance can exist as a primary art form with the movement more important than and independent of the supportive arts used to enhance and reinforce the movement. Evaluation by 10 people who were accomplished in their respective fields and had general aesthetic perceptivity indicated that the production supported the hypothesis.

32. HAWKES, Nena Rey. The Relationship of Motor Ability to

Academic Success Among Women Physical Education Majors at Brigham Young University. M.S. in Physical Education. 1965. 61 p. (L. Holbrook)

Composite T-scores on the Brigham Young University Motor Ability Test were correlated with cumulative grade point average for the 103 women majors from 1957 through 1964. The total group showed an insignificant correlation of .034. The only significant correlation at the .05 level was -.444 for the 1961-62 group, but this indication of a significant negative relationship was atypical. Determining the relationship of academic success and motor ability on this basis was virtually impossible since college senior women were a select group, and senior majors normally had high motor ability.

33. MINHAS, Mahmooda K. A Recommended Program of Physical Education for Girls in Schools in West Pakistan. M.S. in Physical Education. 1964. 156 p. (L. Holbrook)

The Commission on National Education recommended that physical education, sports, and games should be compulsory and should have adequate facilities in Pakistan, where boys and girls receive separate schooling. Questionnaire returns from headmistresses of primary, middle, and high schools indicated that regular physical education, qualified teachers, and open spaces that might be acquired for play areas were virtually nonexistent. Recommendations based on the professional literature were that organized physical education be included in the curriculums, minimum facilities be required, inspectresses and supervisors be appointed, teachers be given in-service training, and intramural and extramural sports be organized under a Sports Control Board.

34. VERNON, Linda Lee. Israeli Folk Dance Forms: The Choreography and Presentation of a Program of Five Modern Dance Compositions Based Upon a Study of Israeli Folk Dance and Related Elements of the Israeli Culture. M.S. in Physical Education. 1964. 74 p. (L. Holbrook)

A program of 5 dances entitled "The Spirit of Israel" was choreographed and presented to a small but interested audience. Evaluation forms completed by the dancers showed that the opportunity for creativity and self-expression through improvisation and performing was beneficial. Evaluation forms completed by the dancers and audience showed increased understanding and appreciation of Israeli culture. The author benefited from researching the Israeli folk dances and culture and from choreographing and producing the program.

35. WHITE, Bonnie Yvonne. The Predictive Index and Academic Achievement: A Study of Freshmen Physical Education Majors and Their Academic Achievement with Some Comparisons to Non-Majors. M.S. in Physical Education. 1965. 36 p. (L. Holbrook)

The non-major group of 100 and major group of 17 were divided into men and women and into transfers and nontransfers for mean comparisons based on *t* at the .05 level. The achieved grade point average (AGPA) was compared with the Predictive Index or expected grade point average (EGPA = .53633 [high school basic subjects] + .04230 [ACT composite score] - .07869). The mean EGPA for the major group was higher but not significantly higher than their AGPA and the mean AGPA was below the level for certification. The non-majors had a significantly higher AGPA than EGPA and a significantly higher AGPA and EGPA than the majors. The women majors had a significantly higher EGPA than AGPA but a significantly lower AGPA than the men majors. The nontransfer major group had an insignificantly higher EGPA and lower AGPA than the transfer group.



University of British Columbia, Vancouver, British Columbia

(S. R. Brown)

36. OLENICK, Norman F. E. The Effects of Endurance Training Upon Brachial Pulse Wave and Heart Rate Measurement of a Group of Middle-Aged Men. M.P.E. 1965. 71 p. (P. Mullins and S. Brown)

A group of 17 middle-aged men who exercised 2 or 3 times a week for 9 weeks showed statistically significant mean improvements in 2-min. pulse recovery count following a 1-min. step test on an 18-in. bench, heart rate during a standardized sub maximal bicycle ride for 6 min., and 2-min. pulse recovery count immediately following the bicycle ride. There were no improvements in 9 brachial pulse wave measurements nor in quiet sitting heart rates. The initial tests were given after a 2-week vacation preceded by 3 weeks of easy introductory work. The exercise periods lasted one hour and consisted of running, calisthenics and volleyball. The intensity of the work was progressively increased during the 9 weeks between tests.

37. PELTON, Terrance R. Motor Performance of Correctional Institution Inmates. M.P.E. 1965. 123 p. (S. R. Brown)

Inmates of a British Columbia reformatory for young men were routinely tested at entry and again four months later with the Indiana Motor Fitness Index I, 20-Second Squat Thrust, and Brace Test. Scores for the McCloy General Motor Capacity and General Motor Quotients were derived. Of 670 tested at entry, only 280 did the Brace Test and only 255 were able to be retested after 4 months of vocational training, school work, and physical education. Hermon-Nelson Grade 6-9 mental ability scores and motor performance scores obtained at induction were significantly lower than those of normal populations. The men were smaller and lighter and had completed fewer school grades than normal British Columbia youths. Motor performance retest scores improved markedly and men with low mental ability improved most from an initially low level. Mental ability and motor performance scores were not significantly correlated.

38. SIMMONS, Robert. The Effect of Circuit Training Upon Cardiovascular Condition and Motor Performance. M.P.E. 1965. 133 p. (S. R. Brown)

Fifteen male students in a required physical education course in circuit training showed statistically significant mean improvements in 9 of 14 cardiovascular variables and in all 13 motor fitness variables. The training was done twice a week in 30-min. periods and lasted 12 weeks. Highest mean improvements were in rest-to-work ratio of the brachial sphygmograph, dynamometrical leg strength, dips, and shoulder extension flexibility. Individual differences in changes made between tests one and two appeared related to activity in the preceding summer months. Students who began circuit training in excellent physical condition after several months hard physical labor had lower retest scores in most variables while students who started in poor physical condition increased the majority of scores at retest.

39. WALLACE, Bruce T. Effects of Training for Competitive Rowing on Cardiovascular Condition Measured by the Brachial Pulse Wave. M.P.E. 1965. 67 p. (S. R. Brown)

Nine varsity and 6 freshmen rowers were given brachial sphygmograph tests every week during an intensive training program lasting 10 weeks. Fifteen measurements were made on each sphygmograph. The 10 values for each measurement were tested for linearity of regression. Only heart rate and blood pressure measurements of some rowers were

linearly related to time spent in training. The mean values of most of the cardiovascular measurements were excellent compared with mean values of other athletic groups reported in the literature.

University of California, Berkeley, California

(H. Eckert)

40. DEMPSAY, Linda B. Comparison of Physically Active and Inactive Women College Students and Alumnae. M.A. in Physical Education. 1965. 69 p. (A. Espenschade)

Fifty-one college women with 11 physical education majors, 19 active and 21 inactive in physical activity, were compared with 47 alumnae with 14 majors, 17 active, and 16 inactive on the basis of the Guilford-Zimmerman Temperament Survey, a modified Schneider Test, and a general survey. The main differences between the 6 groups were in interests and attitudes. The college and alumnae physical education majors tended to be more like the active groups in interest and participation than the inactive groups. Significant differences in temperament and Schneider Test results were between the college and alumnae groups rather than between the major, active, and inactive groups. The lack of differences between majors and non-majors contrasted with findings reported previously and indicated apparently a greater tendency toward similarity than had been found on other campuses.

41. GREENDORFER, Susan L. Inter- and Intra-Individual Differences in Heart Rate Responses to Heavy Exercise. M.A. in Physical Education. 1965. 41 p. (J. Royce)

Fifty-one high school and college women rode a bicycle ergometer with work loads starting at 300 Kgm/min. and increasing by that amount every 3 min. until the subjects could no longer pedal at 50 rpm. Heart rates were recorded continuously with an electromyograph, and the subjects were tested twice, a week apart. The terminal heart rate was practically the same for all subjects and no relationships were found between age and resting heart rate, length of work, or terminal heart rate. True score variance and intra-individual variance were calculated from heart rates during adjacent 15-sec. periods of work. The intra-individual component tended to remain constant during work, except that it increased sharply near the termination of work. Inter-individual differences increased as the work load increased up to an optimal region at slightly less than 6 min. of work. These differences were proportional to the heart rate but heart rates beyond 165/min. with heavy work showed a considerable and progressive decrease in inter-individual differences, and the lowest value was at the terminal heart rate.

42. HARRINGTON, Eleanor F. Effect of Manifest Anxiety on Performance of a Gross Motor Skill. M.A. in Physical Education. 1965. 45 p. (C. L. Allison)

Eighty-two women volunteers took a disguised form of the Taylor Manifest Anxiety Scale and were tested on 2 balancing tasks with alternate subjects having the easy and the difficult task first. The 2 performance groups were subdivided into low, medium, and high anxiety groups. All anxiety groups having the easy task second performed significantly better than those having it first. The medium and high anxiety groups having the difficult task second performed significantly better than those having it first but the low anxiety groups showed no significant difference related to order to presentation. However, anxiety interference produced no apparent difference in performance.

43. LOWE, Roberta J. The Relationship Between a Visual-Developmental Test and Performance of a Visual-Motor Task in



Three and Four Year Olds. M. A. in Physical Education. 1965. 79 p. (H. Eckert)

Twenty-six 3-year-old and 36 4-year-old subjects were given a modified Frostig Developmental Test of Visual Perception and a visual-motor test consisting of 10 trials at taking a "baby" off a patterned rotating stick. The subjects in each group were divided into equated control and experimental groups on the basis of the initial tests. The experimental group practiced the visual-motor test twice a week for 3 weeks and both groups were retested during the fourth week. No significant relationship was found between the total or parts of the visual development test and performance on the visual-motor task for either age group; the correlations were low and showed no consistent pattern. The 4-year-olds performed significantly better than the 3-year-olds on both tests and showed a significant improvement with practice. The 3-year-olds showed no improvement with practice.

44. MEYERS, Judith L. Relearning and Retention of a Balance Coordination. M. A. in Physical Education. 1965. 86 p. (F. M. Henry)

One hundred high school girls took 10 trials climbing a free-standing ladder and were retested in groups of 20 each after 10 minutes, 1 day, 1 week, 4 weeks, and 13 weeks. Correlations between adjacent trials did not tend to increase as practice progressed and correlations between the last practice trial and first retest trial did not decrease as the interval increased, contrary to expectations. Variance analysis showed no significant relationship between the amount of forgetting and the length of the intervening interval.

45. POINDEXTER, M. Coleen. Unilateral and Crossed Lateral Eye-Hand Dominance and Performance on a Perceptual-Motor Task. M. A. in Physical Education. 1965. 50 p. (M. L. Norrie)

Twenty female and 20 male unilaterals (right-eyed and right-handed) and 20 female and 20 male crossed laterals (left-eyed and right-handed) were tested on a Koerth-type pursuit rotor. All groups improved during the 30 trials. Both unilateral groups performed consistently better than the corresponding crossed laterals. Males were in general superior to females except that the unilateral females exceeded the crossed lateral males after the 10th trial and maintained a slight superiority throughout the remaining trials.

University of California, Los Angeles, California

(R. A. Snyder)

46. ADAMS, Gene Merle. The Relation of Leg Strength to Baseball Bat Velocity. 1965. M.S. in Physical Education. 186 p. (W. Massey)

47. BRALVER, Robert E. L. Maximum Bat Swing Velocity and Batting Average of Baseball Professionals. M.S. in Physical Education. 1965. (W. Massey)

48. CARUNCHIO, Dennis Gene. Two Stance Positions and Speed of Movement. M.S. in Physical Education. 1965 (D. Handy)

49. CUMMINS, George Courts, III. The Effect of Weight Training on the Speed of Running. M.S. in Physical Education. 1965. 38 p. (W. Massey)

50. CUNNINGHAM, Gary Allen. Forearm Strength and Distance Shooting in Basketball. M.S. in Physical Education. 1965. (W. Massey)

51. GASSER, Otto Frank W. Weight Training and Self Concept. M.S. in Physical Education. 1965. 67 p. (B. Cratty)
52. HOPKINS, Keith Edward. Personality Traits and Self-estimation of a Gross Motor Skill. M.S. in Physical Education. 1965. (V. Hunt)
53. HYMAN, Dennis. Factors in Dynamic Balance. M.S. in Physical Education. 1965. (J. Keogh)
54. MATHES, Sharon. Body Image and Performance. M.S. in Physical Education. 1965. (V. Hunt)
55. OAKES, Julianne. History of Girls and Women's Physical Education at the Principia: The Formative Years 1897-1934. M.S. in Physical Education. 1965. (B. Miller)
56. ORAM, Phillip Gene. Leg Strength as Related to Movement. M.S. in Physical Education. 1965. (W. Massey)
57. POSTLE, Virginia Zimmer. Right-left Discrimination and Motor Development. M.S. in Physical Education. 1965. 56 p. (V. Hunt)
58. ROUNDY, Elmo Smith. Inquiry into the Problems of and Competencies Needed by Men Physical Education Teachers at the Secondary Level. 1965. Ph.D. in Physical Education.
59. SCHARGITZ, Margaret Ann. Neuromuscular Tension and Intensity of Effort. M.S. in Physical Education. 1965. (V. Hunt)
60. SPRING, Evelyn Lee. Views Toward Increasing Leisure. M.S. in Physical Education. 1965. (D. Handy)
61. STAFFORD, Judith Annette. The Effect of Gross Movement on Verbal Memorization. M.S. in Physical Education. 1965. (M. Latchaw)
62. THURMAN, Clarence Brad. Body Angle and Foot Placement in Baseball Pitching. M.S. in Physical Education. 1965. (C. Young)
63. TROUT, Noel Darwin. Isometric Exercises and Speed of Starting Time. M.S. in Physical Education. 1965. (G. Gardner)
64. YOUSHIKAKI, Judy Kimiye. Neuromuscular Tension and Quickness of Movement. M.S. in Physical Education. 1965. (V. Hunt)

University of California, Santa Barbara, California

(Vera Skubic)

65. BROWN, Gillis. The Transfer Effect of the Change in the State of a Ball on the Performance of a Motor Skill. M.A. in Physical Education. 1965. 93 p. (V. Skubic)

The study was designed to determine the transfer effect of practice in throwing a 9-in. ball on subsequent performance with a 12-, 16-, or 26-in. ball. All of the balls weighed approximately 10 oz. The hypothesis, based on the Theory of Identical Elements, was that negative transfer would increase with an increase in the size of the ball. Without prior practice, there were no significant differences in performance when throwing a 9-, 12-, 16-, or 26-in. ball. Practice with a 9-in. ball had no

significant transfer effect on the performance with a 12-, 16-, or 26-in. ball.

66. CARDER, Brent. The Relationship Between Manifest Anxiety and Performance In College Football. M. A. in Physical Education. 1965. 68 p. (W. M. Wilton)

Subjects were 40 freshman football players who were rated on 2 scales by 3 members of the coaching staff. One scale consisted of rankings on total performance during the season and the other scale involved skill ratings in blocking, tackling, movement agility, and running speed. Subjects were also tested on the M. A. S. and 3 motor ability tests to identify potential. The results indicated no significant relationships between the M. A. S. scores and total performance, individual skill performance, or actualization of football potential.

67. DIEHL, Bobbie. The Effects of Emotional Stress Upon Motor Performance of Anxious and Non-Anxious Subjects. M. A. in Physical Education. 1965. 90 p. (B. Drinkwater)

The Taylor Manifest Anxiety Scale was used to divide 200 high school girls into high anxious and low anxious groups. The galvanic skin response was used as a measure of emotional reaction to stress. A 4-item motor performance battery was administered first without stress and then with subjects believing that motion pictures were being taken of their motor performance for later viewing by teachers and fellow students. The emotional stressor did not elicit a significant stress reaction. The motor performance of anxious and non-anxious subjects did not differ significantly under stress.

68. HEUSSER, Ronald V. Electrocardiographic Responses Consequent To Physical Training. M. A. in Physical Education. 1965. (R. Rochelle)

ECG responses at rest, during exercise, and during 5 minutes of recovery were compared and used to determine the effect of physical training. Three subjects served as a control group and 3 subjects participated in a program that involved walking on a treadmill at 3.5 mph up a 14 percent slope. The greatest increase in heart rate occurred during the first minute of exercise and the greatest decrease occurred during the first minute of recovery. Training reduced the heart rate at rest in the standing position, during exercise, and during recovery. The T-wave for pre-cordial lead IV was higher in the lying than in the standing position. The amplitude of the T-wave at rest and at the tenth minute of exercise increased with training.

69. JOHANSSON, Grace E. The Relative Effectiveness of Massed and Distributed Practice in the Learning of Beginning Folk Dance. M. A. in Physical Education. 1965. 97 p. (J. Hodgkins)

Women college students in beginning folk dance were paired on the basis of the Seashore Test of Rhythmic Perception. Experts rated them on folk dance ability at the beginning and end of the experiment and they had a written knowledge test of folk dance. The massed practice group met for 50 min./day, 5 days/week for 2 weeks and the distributed practice group met for 20 min./day, 5 days/week for 5 weeks so practice time was equal. Both groups improved but the distributed practice group was significantly better in performing the step patterns.

70. McILWAIN, James Larry. A History of Intercollegiate Track and Field Athletics at Santa Barbara State College. M. A. in Physical Education. 1965. 202 p. (W. M. Wilton)

The material was categorized under competition, practice and meet conditions, facilities, personnel, and finances. The major factors

influencing the conduct of the program were financial support, geographical location of the college, curriculum offerings, facilities for practice and competition, type of competition, and male student enrollment.

71. ROBINSON, Edwin Nelson. A Comparison of Laterally Dominant to Crossed Dominant Individuals in Tests of Reaction Time and Hand-Eye Coordination. M. A. in Physical Education. 1965. 79 p. (E. Michael)

Fifty junior high school boys with crossed dominance preference and 50 with lateral dominance preference performed 25 reaction time tests, 15 large muscle hand-eye movement tests, and 8 small muscle hand-eye movement tests. The lateral dominance group performed better in 4 of the 5 areas measured, but accuracy in large muscle movement was equal in both groups.

72. TRIGUEIRO, John Wesley. Changes in the Heart Rates of College Freshmen Basketball Players During Ten Weeks Post-Training. M. A. in Physical Education. 1965. 62 p. (E. Michael)

One-minute step tests at 36 steps/minute and maximal work tests involving progressive work loads on a bicycle ergometer were given at regular intervals to the 7 subjects whose ages were between 17 and 18 years. All were in good physical condition. Comparisons of the heart rate responses during work and recovery were made to determine changes in fitness.

73. WALKLETT, Geraldine A. An Electromyographic Study of the Adductor Longus and Adductor Magnus During Selected Movements of the Thigh. M. A. in Physical Education. 1965. 159 p. (M. Flint)

Electromyographic records were obtained from 6 well-conditioned college men and women performing a series of exercises. The adductor longus and adductor magnus acted as adductors in all positions of the thigh with the adductor longus apparently the stronger adductor. Both acted as prime movers in hyperadduction and neither functioned during lateral rotation or abduction. The adductor longus acted during flexion of the hip, with the adductor magnus acting only slightly, and adductor longus acted during extension of the hip only against heavy resistance. Both muscles acted mildly and only during certain phases of the sit-up, bicycle riding, treadmill walking and running, extension exercise, vertical jump, and stair stepping.

Florida State University, Tallahassee, Florida

(P. W. Everett)

74. BROWN, Ruth Eileen. A Use of the Semantic Differential to Study the Feminine Image of Girls Who Participate in Competitive Sports and Certain Other School-Related Activities. Ph. D. in Physical Education. 1965. 104 p. (K. D. Miller)

Images of a feminine girl, a cheerleader, a twirler, a girl who has high grades, a girl who is on the school's tennis team, basketball team, swimming team, and track team, a girl who is generally athletic, and a sexy girl were obtained from 300 men and 267 women. A factor analysis isolated three definite factors: evaluative, potency, and activity. These factors were compared over all concepts. On the evaluative factor, all sports images differed significantly from the feminine, twirling, and cheerleading images. On the potency factor, all sports images differed significantly from the feminine image. On the activity factor, all sports images and the cheerleading image differed significantly from the feminine image. There was a significant difference between most images (except the feminine) as rated by men and women, but variables such as

age, college grades, personal and family participation, spectator habits, and home town area showed no significant differences.

75. COTTEN, Doyce Jennings. Relationship of the Duration of Sustained Voluntary Isometric Contractions to Changes in Endurance and Strength. Ed. D. in Physical Education. 1965. 99 p. (P. W. Everett)

Twenty-four subjects in 3 experimental and 1 control group trained at a daily sustained voluntary isometric contraction of 25, 50, 75, and 100 percent respectively. Each subject was pre- and post-tested for endurance with a Collins closed circuit respirometer and for strength with a cable tensiometer. Results indicated that increases in duration of sustained voluntary isometric contractions are more closely associated with an increase in strength than with an increase in endurance.

76. DE'AR, John D. The Life and Professional Contributions of James Naismith. Ed. D. in Physical Education. 1965. 144 p. (G. Fox)

The purpose of this study was to show the contributions of Dr. James Naismith to physical education and invention. Areas given special consideration were his personal philosophy, professional career, and role as the father of basketball. Primary sources in Almonte, Montreal, Springfield, Denver, Lawrence, and St. Louis were used and visits were made by the researcher to these locations.

77. GIESE, Warren Kenneth. The Effects of a Longitudinal Program of Swimming Interval Training Upon Selected Physiological Parameters of Pre-Pubescent Males and Females. Ph. D. in Physical Education. 1965. 136 p. (P. W. Everett)

78. GROVES, Barney R. An Investigation of Personality Changes Resulting From Participating in a College Intramural Program for Men. Ph. D. in Physical Education. 1965. 82 p. (P. W. Everett)

79. HANCOCK, Karen. A Study of the Comparison of Personality Variables Among Successful and Less Successful Supervisory Recreators in Municipal Recreation Departments Belonging to the Florida Recreation Association During 1963. M. S. in Recreation. 1965. 87 p. (W. J. Tait)

80. HOLLAND, Dorothy S. Composition of Outdoor and Indoor Air Samples Relative to Exercise Metabolism Research. M. S. in Physical Education. 1965. 39 p. (H. K. Campney)

81. HOSINSKI, John Philip. An Investigation of the Use of Computer Assisted Instruction in Teaching the Shuffle Offense in Basketball. Ed. D. in Physical Education. 1965. 133 p. (K. D. Miller)

Sixteen boys with basketball experience were divided into two groups. One group was taught 6 options of the shuffle offense in basketball with a traditional on-the-floor presentation. The other group was presented the same material by means of a programed presentation on the IBM 7010/1440 Data Communications System. The group receiving the programed presentation exhibited a better knowledge of the material on 4 written knowledge tests. This was significant at the .05 level. No significant differences were found in either group's ability to perform the offense.

82. PAUL, Tom Leo. A Comparison of the Energy Costs of Exercises on the Bicycle Ergometer, the Treadmill, and the Stool Step. Ed. D. in Physical Education. 1965. 83 p. (P. W. Everett)

Ten college students were compared in their metabolic response to

exercise on the bicycle ergometer, the treadmill, and the stool step. The data were treated by an analysis of variance for factorial and regression analyses. A prediction from one machine to another in terms of caloric cost per unit of time was developed by constructing confidence intervals for a ratio of regression coefficients.

83. POPLIN, Ann Sheppard. The Relationship Between Sociometric Status and Basketball Ability of College Women. M.S. in Physical Education. 1965. 60 p. (K. D. Miller)
84. WALKER, William P. The Development of a General Knowledge Inventory Test and a Resource Syllabus for a Foundation Course in Physical Education for College Freshmen. Ph.D. in Physical Education. 1965. 155 p. (P. W. Everett)

Two forms of a general knowledge test were administered to 550 freshmen at Florida State University in the fall of 1964. Each form had 90 multiple choice items covering physiological principles, motor learning, safety-first aid, kinesiological principles, sports knowledge, and philosophy and objectives of physical education. The results indicated that the test was reliable; men scored significantly higher than women, previous physical education experience was positively related to test scores, knowledge objectives were not being met in secondary school programs, and high school programs lacked necessary variety. A syllabus was prepared with references covering the 6 areas.

85. WEHR, Richard Wade. The Relationship Between Selected Joint Angles of Selected Movements and Human Strength Values. Ed.D. in Physical Education. 1964. 102 p. (P. W. Everett)
86. WEINY, Philip K. A Study of the Leisure Activities of the Florida State University Faculty for the Purpose of Planning Recreation Programs. M.S. in Recreation. 1965. 52 p. (W. J. Tait)

Fort Hays Kansas State College, Hays, Kansas (J. J. Belisle)

87. FULTON, Berniece M. A Physical Education Curriculum Guide for Lincoln Elementary School, Hays, Kansas. M.S. in Physical Education. 1964. 284 p. (J. J. Belisle)
88. GARDNER, Ronald E. The Effects of Isometric and Isotonic Exercise Upon the Development of Strength, Endurance, and Cross Transfer of the Elbow Flexor Muscles. M.S. in Physical Education. 1964. 74 p. (H. Falls)
89. HAZLETT, Jack. L. A Comparative Investigation of Strength Gained in the Right Knee Extensor Muscles Utilizing Isotonic Exercises with the DeLorme Boot and the QEM Machine. M.S. in Physical Education. 1965. 88 p. (T. S. Cleland)
90. STRECKER, Gerald D. The Effect of Major Varsity Athletic Participation on Academic Achievement at Fort Hays Kansas State College. M.S. in Physical Education. 1964. 65 p. (J. J. Belisle)
91. WILLIAMS, Clayton. The Effects of Weight Training Upon Vertical Jumping Ability. M.S. in Physical Education. 1965. 81 p. (T. S. Cleland)

George Peabody College for Teachers, Nashville, Tennessee

(R. V. Pangle)

92. FRANK, James H. The Effects of Four Conditioning Treatments on Skill Development and Cardiovascular Efficiency in Selected Physical Education Activity Courses. Ed. D. in Physical Education. 1965. 151 p. (R. V. Pangle)

Subjects were 160 male college students in archery, gymnastics, softball, and tennis, who were assigned randomly to supplemental exercises involving bench stepping, side straddle hopping, spot running, or continued sport activity (control) for the final 3.5 minutes of the 40-min. twice-weekly class period. The sports were selected because they have not been considered contributory to developing cardiovascular efficiency significantly. The first part of the class period consisted of instruction and practice. The Harvard Step Test was administered initially and at 3-week intervals during the 9-week experimental period. A three dimensional analysis showed no significant differences attributable to the sport, supplemental exercise, or time of testing. Final skill tests in each activity indicated that the skill attained was not apparently affected by the supplemental treatments.

93. GARRETT, Leon H. The Effects Of A Strenuous Physical Conditioning Program on Coronary Risk Factors in Men. Ed. D. in Physical Education. 1965. 201 p. (R. V. Pangle)

Thirteen men with a mean age of 27.9 years and a range from 21 to 40 were selected from a larger group of volunteers because of an apparent high predisposition to coronary heart disease on the basis of obesity, blood pressure, and cholesteremia. After a 2-week control period, the subjects underwent 90-120 min. of conditioning exercises under supervision 6 days a week for 6 weeks, and then had a 4-week post-exercise period. Dietary restrictions were not imposed but body weight and diastolic blood pressure decreased during conditioning. Conditioning produced significant increases in treadmill performance, glucose tolerance, and mid-thigh girth along with significant decreases in serum cholesterol and triglyceride and in skinfold and girth measurements at the chest and waist. Phospholipids and diastolic blood pressure increased significantly after cessation of exercise. The results indicated that physical conditioning influenced the risk factors of coronary heart disease favorably.

94. LEWIS, Audrey E. A Comparison of Three Methods of Teaching Bowling to College Women. Ed. D. in Physical Education. 1965. 112 p. (R. V. Pangle)

Conventional instruction in a bowling alley, conventional instruction in a gymnasium, and noninstruction were compared using 45 beginning bowlers in 3 scheduled classes at Tennessee State University. The Scott Motor Ability Test was administered initially and subjects were divided into high and low motor ability groups on the basis of the median. A pre-test of bowling showed no significant differences among the treatment groups. The average score of 3 games was used after 20 sessions of instruction and/or participation to show the relative effect of the methods and after 8 weeks of nonparticipation to measure retention of bowling skill. The results indicated that there were no significant differences at the .05 level in bowling achievement or retention between high or low motor ability bowlers taught by the 3 methods.

95. WILLIAMS, Nofflet D. An Exploratory Study of Factors Related to Accidental Injury to Children of Elementary School Age. Ed. D. in Physical Education. 1965. 120 p. (R. V. Pangle)

The study involved 2,572 cases recorded by the Health Service Department



in Nashville during regular school years from 1957-58 through 1962-63. Addresses of injured children were used to establish residence in census tracts that were divided into 4 socioeconomic classes based on median family income, parental occupation, and housing unit condition. Chi square analyses based on the socioeconomic classes showed significantly different proportions of injuries for place of injury, part of body injured, types of accidents, nature of injury, object involved, age of child, and grade level of child. Stepwise multiple regression analyses identified significant single and/or multiple predictor census tract variables for 60 of the 63 accidental injury variables. The multiple correlations ranged from .298 to 1.000 and the average was .839.

Illinois State University, Normal, Illinois

(R. N. Singer)

96. BRIDGES, Dennis L. The History of Basketball at Illinois Wesleyan University. M.S. in Physical Education. 1965. 142 p. (A. Gillett)

The major sources of information were newspapers, records, and interviews. Illinois Wesleyan University completed 56 consecutive seasons of basketball in 1965 under 11 coaches with a cumulative win-loss record of 649 to 419 for .609 proportion and 16 conference or state championships.

97. CASKEY, Shiela R. Effects of Visual Motivation on the Standing Broad Jump Performance of Children. M.S. in Physical Education. 1965. 74 p. (B. Keough)

Subjects were 269 children in grades 1, 2, and 3 who were encouraged to improve their performance either verbally, with a colored tape indicating their previous performance, or with a colored tape indicating their height. Visual motivation proved better than verbal encouragement and had the greatest effect on first grade children.

98. DELL, Donald L. An Attitude Scale for High School Freshman Athletes. M.S. in Physical Education. 1965. 51 p. (A. Gillett)

Questions for a scale to measure self-control, sense of responsibility, and respect for others were developed from professional journals, inventories, and interviews with coaches and athletes. The scale was cut to 117 statements by using Wang's criteria, and a pilot study with 9 freshman athletes at Bethany High School indicated that it was at the freshman level of understanding. The scale was given to 100 graduating grade 8 students and was cut to 54 statements by using the Flanagan Discriminatory Index for validity. The final test had a split-half reliability of .84 or a whole-test reliability of .91 using the Spearman-Brown prophecy formula.

99. FORD, Richard G. A Descriptive Analysis of Offensive Linemen Rated as Outstanding. M.S. in Physical Education. 1965. 89 p. (M. E. Weisbecker)

Outstanding high school offensive linemen in the Southwestern Conference were measured for height, weight, leg strength, speed, movement time, and force of impact. Each subject was photographed while blocking as a basis for determining movement patterns. They either drove with both legs, or used the left to start and the right to drive or vice versa. Subjects with the highest three impacts used different patterns. The first movement of the shoulders was upward and of the hips downward. The shoulder contacted the blocking apparatus before the forearm. Knee movement was minimal until the body lengthened.

100. GASSEN, Laurence Michael. Comparison of Two Weight Training



Methods for Muscle Girth Development. M.S. in Physical Education. 1965. 52 p. (A. Gillett)

Girth measurements of the right and left biceps and quadriceps were taken of 23 male college students who then used weight training programs suggested by De Lorme or Macqueen 3 days/week for 8 weeks. The group using the De Lorme method had significant gains by the correlated t ratio for right and left biceps and left quadriceps girth; the group using the Macqueen method had significant gains for all girths. The differences between groups were not significant, so neither method seemed more effective for developing girth.

101. OLSON, Gary F. Relationship of Selected Stances of Football Linemen to Speed of Movement. M.S. in Physical Education. 1965. 105 p. (M. E. Weisbecker)

Subjects were 34 varsity and freshmen players who were tested going forward, laterally right, and laterally left from a 3- and 4-point stance. The best time of 3 trials was used as the subject's time under each condition. Using t for correlated data showed that the 3-point stance was significantly superior to the 4-point stance.

102. PARKS, Janet Bliss. A Comparison of Two Methods of Teaching Tennis. M.S. in Physical Education. 1965. 81 p. (E. Degutis)

One group of college women who were beginning tennis players were taught the basic skills by the traditional method and a similar group were taught by the volley method. Both groups were tested at the end of the instructional period with the Broer-Miller Forehand-Backhand Drive Test, the Cobane Service Test, and the Miller Volley Test. The volley method was significantly better for serving, but the other differences between groups were not significant.

103. SEMBROWICH, Walter L. Effects of Selected Work and Rest Cycles on Selected Physiological Measures. M.S. in Physical Education. 1965. 32 p. (P. Dohrman)

Fifty college males performed work and rest cycles on different occasions by pedalling a bicycle ergometer against a moderate and a heavy load and resting 1 minute lying quietly. Measurements of reaction time, movement time, heart rate, and respiratory rate were taken during the work and rest cycles. Analysis of variance with a treatment by subjects design was used for each measure. The work and rest cycles had no significant effect on reaction time and movement time, but the heart rate and respiratory rate were affected significantly by the work and rest cycles at the .05 point.

104. STEPHYNS, Opal Ruff. Achievement Tests in Speed-A-Way for High School Girls. M.S. in Physical Education. 1965. 85 p. (B. Keough)

A rebound ball against wall, dodge obstacle, and run test, a foot pass to wall, recover, and foot-lift to self test, and a place kick to a wall target test were administered to 166 Grade 9 girls. Test-retest reliabilities were respectively .73, .53, and .46. Validity coefficients with judges' rankings were .49, .34, and .34. The intercorrelations ranged from .23 to .42. The tests failed to meet desired standards.

105. VISEUR, Ronald L. A Suggested Physical Education Program for the Homer Public Schools. M.S. in Physical Education. 1965. 132 p. (A. Gillett)

The existing facilities, equipment, budget, objectives, policies, and curriculum were reviewed, and personnel associated with the program were interviewed. Administrative policies concerning health and safety, physical education, and athletics were developed. Evaluation

procedures for the continued improvement of the program were recommended.

University of Illinois, Urbana, Illinois

(A. W. Hubbard)

106. BARKMAN, Betty Jane. The Prevalence of Certain Harmful Health and Safety Misconceptions Among Twelfth Grade Students. M.S. in Health Education. 1965. 89 p. (W. J. Huffman)
107. BAUMGARDNER, Betty J. Measurement of Attitudes Toward Physical Education of Girls in Senior Leadership Class in a Selected Senior High School. M.S. in Physical Education. 1965. 59 p. (O. Young)
108. BELZER, Edwin George. The Quickness of Selected Automobile Braking Methods. Ph.D. in Health Education. 1965. 97 p. (H. S. Hoyman and W. J. Huffman)
109. BYNUM, William A., Jr. Work Capacity of Altitude Acclimatized Men at Altitude and Sea Level. Ph.D. in Physical Education. 1965. 84 p. (C. O. Jackson)
110. CABLE, Donald Lee. Intramural Sports Courses in Selected Institutions of Higher Education. M.S. in Physical Education. 1965. 139 p. (D. O. Matthews)
111. CALDWELL, Harvey G. A History of Recreation Therapy in Illinois State Mental Hospitals, 1930 to 1964. M.S. in Recreation. 1965. 62 p. (V. Frye)
112. CALUD, Mahella Yanson. Attitudes of University of the East Women Students Toward Required Physical Education. M.S. in Physical Education. 1965. 64 p. (A. W. Hubbard)
113. COOKE, Bryan. Evaluation of Bowel Management Techniques Employed by Paraplegics and Quadriplegics. M.S. in Health Education. 1965. 102 p. (F. E. Boys)
114. CORROLL, Victor A. The Variability of Physical Education Measures in Different Age Groups. M.S. in Physical Education. 1965. 139 p. (T. K. Cureton)
115. DANN, Roscoe James. The Development of a Family Health Knowledge Test. M.S. in Health Education. 1965. 123 p. (W. H. Creswell)
116. DAVIS, Samuel C. The Effect of Football Equipment Weight on Acceleration and Speed. M.S. in Physical Education. 1965. 35 p. (A. W. Hubbard)
117. DAY, Phyllis M. Comparison of Tactual and Kinesthetic Feedback. Ph.D. in Physical Education. 1965. 59 p. (A. W. Hubbard)
118. DITTON, Robert B. An Examination of Considerations Used in Planning a Branch Union on Selected College Campuses. M.S. in Recreation. 1965. 107 p. (C. K. Brightbill)
119. ELLIS, Michael J. The Effects of Exercise on Expiratory

- Capacity. M.S. in Physical Education. 1965. 58 p. (T. K. Cureton and B. J. Noble)
120. FARHI, Asher. Relative Statistical Contribution of Factors in Total Peripheral Resistance Formulas for Adult Men. Ph.D. in Physical Education. 1965. 93 p. (T. K. Cureton)
  121. FOLEY, William J. A Comparison of Three Endurance Running Programs on Cardiovascular Condition and Endurance Performance. M.S. in Physical Education. 1965. 126 p. (T. K. Cureton)
  122. GELLINGER, T. J. The Effect of Blindfold and Instructed Practice on Pitching Control. M.S. in Physical Education. 1965. 31 p. (A. W. Hubbard)
  123. GETCHELL, Leroy H. An Analysis of the Effects of a Season of Golf on Selected Cardiovascular, Metabolic, and Muscular Fitness Measures on Middle-Aged Men; and the Caloric Cost of Golf. Ph.D. in Physical Education. 1965. 183 p. (T. K. Cureton)
  124. GODBOUT, Paul. Organic Effects of Gymnastic Circuit Training. M.S. in Physical Education. 1965. 144 p. (T. K. Cureton)
  125. GOODALE, Thomas L. An Analysis of Leisure Behavior and Attitudes in Selected Minneapolis Census Tracts. Ph.D. in Recreation. 1965. 129 p. (C. K. Brightbill)
  126. GUGLIOTTA, Joseph D. Effects of Tobacco Smoking on Estimated Cardiac Output. M.S. in Health Education. 1965. 55 p. (F. E. Boys)
  127. HART, Karen. The Effects of Anxiety, Music, and Heart Rate on All-Out Performance of College Women. M.S. in Physical Education. 1965. 58 p. (T. K. Cureton and B. J. Noble)
  128. HASKELL, William L. The Effects of Three Endurance Training Programs on Energy Metabolism. Ph.D. in Physical Education. 1965. 200 p. (T. K. Cureton)
  129. HEATH, Edward H. A Semantic Differential Study of Attitudes Relating to Recreation as Applied to a Bicultural Setting. Ph.D. in Recreation. 1965. 170 p. (C. K. Brightbill)
  130. HEMBROUGH, Gary D. The Effects of a Motivational Variable on the Performance of Selected Physical Fitness Items by Selected Junior High School Boys. M.S. in Physical Education. 1965. 88 p. (T. K. Cureton and B. J. Noble)
  131. HENRIKSEN, Guy R. The Effects of Isotonic, Isometric, and Combined Isotonic-Isometric Resistance Programs on Back Strength. M.S. in Physical Education. 1965. 57 p. (R. H. Pohndorf)
  132. HLADE, John. Personnel Practices of Public Park and/or Recreation Agencies in Illinois. M.S. in Recreation. 1965. 71 p. (C. K. Brightbill)
  133. HONKER, H. Andrew. Case Studies of the Administration of Selected Federal, State, and Regional Outdoor Recreation Areas. M.S. in Recreation. 1965. 199 p. (A. V. Sapora)

134. KAMLER, Gerald C. The Effects of Noise on Three Psychological Study Traits: Attention, Alertness, and Concentration. M.S. in Health Education. 1965. 64 p. (F. E. Boys)
135. KOCH, Warren E. The Caloric Cost of Playing Basketball. M.S. in Physical Education. 1965. 107 p. (T. K. Cureton and B. J. Noble)
136. LANDERS, Daniel M. A Comparison of Two Gymnastic Judging Methods. M.S. in Physical Education. 1965. 102 p. (T. K. Cureton)
137. LIVERMAN, Robert D. Effects of Progressive Physical Training on Simultaneous Cardiovascular Records. Ph. D. in Physical Education. 1965. 104 p. (T. K. Cureton)
138. MAGNABOSCO, Peter T. The Exercise Therapy Clinic at the University of Illinois. M.S. in Physical Education. 1965. 133 p. (E. F. Zeigler)
139. McKELVEY, Gregg. An Investigation of the Effects on Middle-Aged Adults of an Exercise Program Conducted on the Posturizing Mini-Gym. M.S. in Physical Education. 1965. 73 p. (T. K. Cureton and B. J. Noble)
140. McKENNA, Patrick A. An Analysis of Expert Opinion on Two Fundamental Tennis Strokes. M.S. in Physical Education. 1965. 77 p. (E. F. Zeigler)
141. MEYER, Lee Edward. A Study of the Free-Time Experiences and Interests of Twenty-eight Selected Mental Patients. M.S. in Recreation. 1965. 115 p. (C. K. Brightbill)
142. MIHEVC, David John. A Comparison Between Response Times of Manual Braking Techniques and Between Manual Braking and the Conventional Right Foot Method. M.S. in Health Education. 1965. 43 p. (W. J. Huffman)
143. MILENIS, Chris A. The Relationship of Vertical Deflections in the Brachial Pulse Wave, Ballistocardiogram, and Electrocardiogram to Endurance Performance. M.S. in Physical Education. 1965. 92 p. (T. K. Cureton)
144. MODICA, John M. The Effects of Baseball Training and Competition on Selected Cardiovascular Measurements. M.S. in Physical Education. 1965. 73 p. (T. K. Cureton)
145. PALLANDI, Taimo. The Effects of Progressive Fitness Training on the Total Peripheral Resistance of Sedentary Adult Men. M.S. in Physical Education. 1965. 135 p. (T. K. Cureton)
146. RICHELLE, Alberta L. A Case Analysis of Factors Associated with the Leisure Time Habits and Interests of a Select Number of Mentally Retarded and Physically Disabled Young Adults. M.S. in Recreation. 1965. 138 p. (A. V. Saporita)
147. ROYS, Keith B. Differential Interests of Male Administrators in Community Recreation as Compared to Other Occupations Described by the Strong Vocational Interest Approach. Ph. D. in Recreation. 1965. 87 p. (C. K. Brightbill)

148. SKRINAR, Gary S. A Comparison of Selected Physical Fitness Measures Among Post Office Carriers and Clerks. M.S. in Physical Education. 1965. 68 p. (T. K. Cureton and B. J. Noble)
149. TRAFTON, Dorothy Curtis. The Effect of Grades as Incentives on Junior High School Girls in the Learning and Performing of Skills in a Selected Team Sport. M.S. in Physical Education. 1965. 56 p. (O. G. Young)
150. VANIS, George John. A Cinematographic Analysis of the Yamashita Vault Over the Long Horse. M.S. in Physical Education. 1965. 73 p. (T. K. Cureton)
151. WEBER, Herbert. A Quantitative Study of Eosinopenia and Other Stress Indices. Ph.D. in Physical Education. 1965. 321 p. (T. K. Cureton)
152. WEBER, Thom. An Historical Analysis of the Place of Dance in Undergraduate and Professional Physical Education in the United States. M.S. in Physical Education. 1965. 82 p. (E. F. Zeigler)
153. WHITEHILL, Linda. The Relationship Between the Progressive Pulse Ratio Test and the Brachial Pulse Wave in College Women. M.S. in Physical Education. 1965. 77 p. (T. K. Cureton)
154. WHITWILL, Mary Lou. The Relationship of Age to Cardiac Interval in Girls and Women. M.S. in Physical Education. 1965. 74 p. (T. K. Cureton)

## Indiana University, Bloomington, Indiana

(K. W. Bookwalter)

155. ARNOLD, Elisabeth Luise. The Relationship Between Physical and Mental Practice and Initial Ability in Learning a Simple Motor Skill. P.E.D. 1965. 176 p. (A. T. Slater-Hammel)  
Practice methods were evaluated for over 100 grade 10 girls from 3 initial skill levels. Three random samples were drawn from each skill level. Nine days of practice were followed by a final test. Physical practice and alternating practice were equally effective in improving dart throwing scores, and both were superior to mental practice.
156. DOLLGENER, Robert Joe. A Critical Appraisal of a Selected Score Card for Evaluation of Undergraduate Professional Programs in Physical Education. P.E.D. 1965. 305 p. (K. W. Bookwalter)  
The score card was applied to 15 randomly selected colleges and universities in Indiana. On the bases of area and item analyses and internal consistency, a revised score card was proposed.
157. ELLIOTT, Jerold Everett. The Establishment of a Guide for the Development of Multi-use Camp Sites and Facilities. Re. D. 1965. 260 p. (T. R. Deppe)  
Selected items (515) were rated in 22 personal interviews with camping authorities. The factors derived made possible designing a multi-use camp facility to meet the general and most of the specific needs of the users. Few adaptations needed to be made to accommodate the handicapped. A well-planned winterized camp incorporated most of the requirements for multi-use.
158. FULTON, Martin William. A Traffic Safety Attitude Scale for Indiana Ninth Grade Students. H.S.D. 1965. 145 p. (D. J. Ludwig)

Two 55-item scales were administered to 523 randomly selected Indiana grade 9 students. No difference was found between scores for boys and girls. Both forms were found to be valid and reliable measures of traffic safety attitudes for the population measured.

159. GJERTSEN, Arthur E. A Study of Accidents and Injuries in Organized Camps in the State of Michigan. H.S.D. 1965. 215 p. (D. J. Ludwig)

Accident report forms for 3 months' use were mailed to 69 camps with a combined camp population of 32,997. Camp accidents occurred most frequently in the first 5 days of the camping period. The major causes of camp accidents were collisions, and most accidents did not keep the injured individuals from participating fully in camp activities.

160. HANSON, Robert Fred. Determination of Purposes and Objectives, Course Content and Teaching Techniques for a College Undergraduate Recreation Course on the Youth-Serving Agencies. Re.D. 1965. 189 p. (T. R. Deppe)

A 30-person jury of experts rated purposes and objectives and course content topics. Seven purposes and objectives and 63 topics for course content were selected for the proposed course. Based upon the jury recommendations, a course outline, with suggestions for references and guiding questions, was developed.

161. JONES, Jack Adron. The Relationship of Physical Fitness to Academic Success, Academic Aptitude, and Athletic Participation. P.E.D. 1965. 125 p. (J. B. Daugherty)

Fleishman's Basic Fitness Tests were administered to 101 randomly selected college freshman men volunteers. Using the data for the whole group showed no significant correlation between physical fitness and the other variables, although a low correlation between grade point average and scholastic aptitude was significant. When the men were separated into high, average, and low groups on physical fitness, the only significant correlations were for the high group where academic aptitude was negatively related to both physical fitness and the amount of athletic participation in high school.

162. LINDSEY, Ruth. An Electromyographic Analysis of Selected Neck Muscles. P.E.D. 1965. 165 p. (E. Davies)

Bipolar surface electrodes were attached to the sternomastoid and scalenus medius muscles of 4 subjects, and action potentials were recorded during flexion, extension, rotation, lateral flexion, and combinations of movements in the prone, supine, and sitting positions. Experiments were conducted to investigate the role of the anterior and posterior fibers of the sternomastoid, the coordination of the right and left sternomastoid and scalenus medius, and the nature of bursts of activity observed. The sternomastoid and scalenus medius assisted in flexion against gravity or resistance, and both played a minor role in lateral flexion of the neck. Other specific actions of muscles were determined.

163. McCONAHEY, Thomas Mitchell. The Effect of an Active Recreation Program on Selected Mentally Ill Patients at Cambridge State Hospital. Re.D. 1965. 236 p. (J. R. MacLean)

Mentally ill women patients were paired on the basis of diagnosis, age, residence in the hospital, and education. The pairs of patients were divided randomly and randomly assigned to groups. Hospital Adjustment Scale ratings were made at the beginning, at the end of 3 months, and at the end of 6 months. A planned recreation program improved hospital adjustment of long-term schizophrenic female patients. In planning an active recreation program for long-term schizophrenic female patients,

beginning activities should be more individual in nature and more complex activities should be added to the program gradually.

164. MEHAFFEY, Eugene Lee. The Effects of Teaching Selected Forehand Stances and Grips on Tennis Achievement by College Men. P. E. D. 1965. 91 p. (J. B. Daugherty)

Subjects (48 college men) were assigned at random to 4 groups. Groups were assigned at random to variations of stance and grip. Groups met 55 minutes twice each week for 6 weeks. No significant difference was found on the forehand drive between groups using the Eastern grip and the groups using the Continental grip. Instruction yielded significant improvement from initial to final test in 3 of the groups on the forehand drive. None of the 4 combinations of stance and grip was significantly better than the others.

165. MOBLEY, Toney A. Attitudes Toward the Relationship of Recreation and the Christian Religion. Re. D. 1965. 213 p. (T. R. Deppe)

Statements from the literature were developed into an Attitude Scale survey instrument. Responses were obtained from 51.29% of the sample (222 church leaders and 15 authorities). Ministers with recreation programs believed that there was a closer relationship between recreation and the Christian religion than other social leaders did and, in general, church leaders believed that recreation was a means to an end while authorities believed that it was an end in itself.

166. MYHRE, Loren Glifford. A Comparison of Body Density and Potassium-40 Measurements of Body Composition. P. E. D. 1965. 124 p. (J. B. Daugherty)

Subjects (100 volunteer males ranging in ages from 15 to 87 years) were divided into 6 age groups. The fat content of each subject, expressed as percent of body weight, was estimated by the potassium-40 and body density methods. The potassium-40 method yielded a fat estimate significantly greater than that obtained from the body density method for all of the age-groups studied. From 15-58 years of age, age was not a significant factor contributing to the differences between the estimates of fat obtained from the potassium-40 and body density methods, while after 60 years of age, age was a significant factor.

167. PARKINSON, Charles J. Evaluation of Factors for the Classification of Junior High School Boys in Selected Sports Activities. P. E. D. 1965. 124 p. (J. B. Daugherty)

Measures of physical fitness, sports skills, sports interests, and sports attitudes were obtained from 212 junior high school boys. The Wetzel Grid physique channels were used for physique classifications. Significant relationships were found between certain sizes and variables of maturity, motor fitness, sports interests, and the ability to perform selected sports skills. Some students were handicapped in certain sports activities by their physiques. However, single classifiers in sports activities were limited in usefulness.

168. SEXTON, Carl Norman. The Development of Physical Fitness and Sports Skills of High School Boys in Two-Year and Four-Year Physical Education Programs. P. E. D. 1965. 122 p. (K. W. Bookwalter)

The subjects (313) were randomly selected from 8 schools and measured on 7 fitness and sports-skill items. Where analysis of variance revealed significant differences between group means, Duncan's New Multiple Range Test for unequal N's was applied. Seniors participating in 4-year programs appeared to possess a higher degree of fitness and



sports skills than seniors in 2-year programs, sophomores completing a 2-year program, and sophomores completing 2 years of a 4-year requirement.

169. STEBBINS, Richard James. A Comparison of the Effects of Physical and Mental Practice in Learning a Motor Skill. P. E. D. 1965. 92 p. (A. T. Slater-Hammel)

Subjects (93 volunteer males) within each class were assigned to 5 treatment conditions at random. Classes met 3 times a week for a 7-week period. Results of the application of Kramer's Extension of Duncan's New Multiple Range Test revealed that the mental practice group and control group were not significantly different. In learning a simple hand-eye coordination skill, the greatest amount of improvement was apparently made by using a combination of practice conditions. As much improvement took place during mental practice as during physical practice when mental practice preceded physical practice.

170. STEWART, Harriett E. A Test for Measuring Field Hockey Skill of College Women. P. E. D. 1965. 136 p. (N. L. Leyhe)

Students (228 college women) in field hockey classes or members of intercollegiate field hockey teams were tested on 5 items during the 7th week of school in 3 institutions. The backboard test was found to be objective and reliable. The fielding and drive, goal shooting, and ball control tests were unsatisfactory.

171. VENCEL, Steve Alexander. Venereal Disease Education in Indiana Secondary Public Schools. H.S.D. 1965. 145 p. (D. J. Ludwig)

Information was submitted by the principals of 241 secondary schools on policies, practices, and procedures which governed the venereal disease instructional program. A 30-statement knowledge inventory was administered to 976 students enrolled in health classes. Educational problems associated with venereal disease were not unique to any school size. Students possessed insufficient knowledge of venereal diseases.

172. WESCOTT, Richard Tapley. The Effect of an Imitative Type of Resistance Exercise on Throwing Skill. P. E. D. 1965. 118 p. (A. T. Slater-Hammel)

Four groups of subjects were randomly formed and randomly assigned to treatments. Treatments occurred twice weekly for 9 weeks. No improvement and no loss in throwing speed and accuracy resulted from the practice of throwing. The practice of throwing, the practice of an imitative type of resistance exercise, and the practice of a combination of the imitative type of resistance exercise and throwing were equally ineffective methods for improving accuracy.

State University of Iowa, Iowa City, Iowa (L. E. Smith, M. G. Scott)

173. BRASSIE, Paul Stanley. Effectiveness of Intermittent and Consecutive Methods of Practicing Free Throws. M. A. In Physical Education. 1965. 35 p. (L. E. Alley)

The 19 varsity and junior varsity basketball team members at University High School were divided randomly into groups that practiced free throws consecutively or intermittently. The initial and final test consisted of free throws made in 100 trials taken both consecutively and intermittently, and percentages of free throws made in interscholastic games were also used. The only significant gain at the .05 level was for the intermittent practice group on the consecutive test, and the mean difference between groups on the final test was not significant for either test. The intermittent practice group had a mean percentage of successful free throws in



games that was 4.8 higher than the consecutive practice group.

174. BURKE, Norma Peggy. Measures of Patellar Reflex, Reaction and Body Movement Times at Selected Stages of the Menstrual Cycle. Ph.D. in Physical Education. 1965. 139 p. (M. G. Scott)

Subjects were 21 women physical educators ranging in age from 22 to 40 years who were tested for reaction time of leg extension and leg flexion, patellar reflex time, and total body movement time at 6 stages of their menstrual cycles. Analysis showed no significant difference among stages for any test. The only significant correlation was between patellar reflex time and leg extension reaction time. Basal oral temperature was significantly higher at the three-quarter point in the menstrual cycle.

175. CARTER, Francis H. Selected Kinesthetic and Psychological Differences between the Highly Skilled in Dance and in Sports. Ph.D. in Physical Education. 1965. 75 p. (M. G. Scott)

Balance tests, "time" tests, and a personality inventory were given to 36 college women physical education majors skilled in dance and 36 skilled in sport. The dance group was significantly higher on balance measures and succorance need but lower in endurance than the sports group. Some intercorrelations among "time" tests showed significant differences between the groups.

176. CHENEY, M. Kay. A Comparison of Three Groups of Skilled Performers on a Battery of Selected Tests of Balance. M.A. in Physical Education. 1965. 45 p. (M. G. Scott)

College women and junior high school girls (N = 86) who were rated by instructors as being at an advanced skill level in dance, gymnastics, and sports were tested in balance ability and general motor ability. The gymnastics and dance groups were significantly better than the sports group in the sideward leap test, the balance stick test blindfolded, and the balance stick test lengthwise. The dancers were significantly better than the others in the balancimeter test and significantly better than the gymnasts in the balance stick test lengthwise. Correlations between balance and motor ability were low, ranging from -.07 in the gymnastic group to .36 in the sports group.

177. CONDON, Jean A. A Comparison of Reaction Time at Different Stages of the Menstrual Cycle. M.A. in Physical Education. 1965. 49 p. (M. G. Scott)

Abdominal and lower leg reaction times were measured on 26 college women at 6 stages in their menstrual cycles. The leg reaction times showed no significant difference between stages. The abdominal reaction time was significantly different between the last day of the cycle and the first day of flow, and between the first day of flow and the three-quarters phase.

178. CONNOLLY, Judith Ann. A Comparison of the Buoyancy of Negro and White High School Girls as it Affects Swimming Power. M.A. in Physical Education. 1965. 33 p. (M. G. Fox)

A buoyancy test using the Hunter Force Indicator to determine the force required to float the legs and the Fox Power Tests for the front crawl and elementary back strokes were administered to 55 white and 54 Negro girls in grades 11 and 12 along with height, weight, and center of gravity measures. No significant differences in buoyancy or swimming power were found between the groups at the .02 level. The correlation between the force required to float the legs and crawl stroke power was low but significant at the .05 level, and the correlation between the center of buoyancy and the elementary back stroke power was low negative but significant.

179. FRIAL, Paula Isabel Santos. Prediction of Modern Dance Ability Through Kinesthetic Tests. Ph.D. in Physical Education. 1955. 89 p. (M. G. Scott)

Ninety college students were divided into non-dancer, poor dancer, and good dancer groups on the basis of a questionnaire and a 5-point ability rating scale. Thirteen kinesthesia tests were administered. Good dancers were significantly better than poor and non-dancers on the balance leap and balance stick tests. Good dancers were significantly worse than both groups on the leg raising test and significantly better than non-dancers on the arm circling test. These kinesthesia test items were combined so that relative ability in modern dance could be predicted by any of the following formulae:  $2.5(\text{balance leap}) + 1.3(\text{balance stick}) + 8.5(\text{arm circling}) - 2(\text{leg force}) - 1(\text{leg raising})$ , or  $2.4(\text{balance leap}) + 1.2(\text{balance stick}) - 1.9(\text{leg force}) - 1(\text{leg raising})$ , or  $2.4(\text{balance leap}) + 1.4(\text{balance stick}) - 1(\text{leg raising})$ .

180. GLASER, Von Dell J. Manual of Job Analyses for the Cedar Rapids, Iowa Young Women's Christian Association. M.A. in Physical Education (Recreation Program). 1965. 30 p.

The manual included job analyses for the professional and non-professional staff and job descriptions for the 11 volunteer committees.

181. HARDIN, Donald H. Effect of Submaximal Exercise During Formative Periods on Ability to Develop Endurance During Post-Formative Periods: A Study with Rats. Ph.D. in Physical Education. 1965. 56 p. (L. E. Alley)

Eighty male albino rats (Sprague-Dawley) were divided into 5 groups when 25 days old. The next 20 weeks, one group exercised (swam) regularly, 3 groups exercised for 5 weeks consecutively at different periods, and the fifth group was confined to cages. Then all groups had a 5-week exercise program, had a swimming endurance test, and the hearts, kidneys, and adrenals were weighed. Some difficulty was encountered testing endurance, but the insignificant differences of swimming endurance times at the .01 level indicated that submaximal exercise during the formative period had no effect on the rat's ability to develop endurance as an adult. The only significant differences in absolute or relative organ weights between the groups were that the rats that exercised from age 25 to 60 days had greater absolute kidney weights than those that exercised regularly from age 25 to 165 days and from age 60 to 95 days.

182. HARRIS, Dorothy Virginia. An Investigation of Psychological Characteristics of University Women with High and Low Fitness Indices. Ph.D. in Physical Education. 1965. 90 p. (M. G. Scott)

The bent arm hang, sit-up, standing broad jump, grasshopper, and forward bend items of the Iowa Test of Motor Fitness were administered to 250 university women. The highest 60 and lowest 60 subjects were given the Edwards Personal Preference Schedule. Relationships were investigated between fitness measures and personality variables within each group. Comparison of group means for the personality variables showed no significant differences. The high fitness group was significantly higher than the norm in Autonomy and Heterosexuality and significantly lower in Deference and Dominance. The low fitness was significantly higher than the norm in Abasement and significantly lower in Deference.

183. HAY, James Gordon. Pole Vaulting: A Mechanical Analysis of Factors Influencing Pole-Bend. M.A. in Physical Education. 1965. 37 p. (L. E. Alley)

The subject was the leading pole vaulter at the University who was capable of a 14' 8" vault and accustomed to a flexible pole. Six trials at 5

different heights were photographed with a Bolex 16 mm and a Bell and Howell motion picture camera. An electric timer, modified Keystone projector, and regulation crossbar were also used. The measurements were: horizontal and vertical velocities at take-off, angle of take-off, horizontal distance between top hand and take-off foot at take-off, distance of hands apart at take-off, and magnitude of pole-bend. The statistically significant correlations with pole-bend were for angle of take-off (.01 level), and for horizontal velocity and horizontal distance from top hand to take-off foot (.05 level). The primary factor affecting pole-bend seemed to be horizontal velocity.

184. HORTON, Doris Ann. The Effect of Gravity, Resistance and Knowledge of Results on Performance of a Kinesesthetic Arm Positioning Task. Ph. D. in Physical Education. 1965. 105 p. (M. G. Scott)

Subjects were 80 grade 8 girls who were randomly assigned to 8 groups for a three-dimensional factorial experiment ( $2 \times 2 \times 2$ ) to determine the effects of gravity, resistance, and knowledge of results in a simple, kinesesthetic, arm positioning task. Multivariate analysis of variance showed significant differences in favor of knowledge of results and for the interaction of trials with knowledge but no significant effect of gravity or resistance.

185. JENSEN, Barbara E. Development of a Camper Attitude Scale to Evaluate Attitudinal Change Toward a Specific Camp Objective. Ph. D. in Physical Education. 1965. 270 p. (M. G. Scott)

A scale of the Likert type was developed to measure camper's attitudes toward program experiences indigenous to the natural environment. The scale was used to compare attitudinal changes of campers in camps having and not having this specific program objective and to compare variations in the approach to meeting this objective. The results showed no significant differences.

186. LANCEY, Barbara. Kinesiological Analysis of Selected Physical Fitness Tests. Ph. D. in Physical Education. 1965. 246 p. (M. G. Scott)

Action potentials from the rectus abdominus, internal oblique, external oblique, and rectus femoris were compared in 4 sit-up tests with and without fixation of the feet and in 2 leg-lift tests in which the hand position varied. The Kraus-Weber Test, Item 3, was used as the leg-lift test. The rectus abdominus showed essentially equal contraction in all sit-up tests but the rectus femoris showed higher action potentials in the AAHPER Sit-up Test. All muscles showed higher action potentials in the leg-lift tests when the position was held 10 sec. at a 10-in. height.

187. MABRY, Gladys Laurene. A Film for Instruction in the Recognition of Common Swing Errors of Beginning Women Golfers. Ph. D. in Physical Education. 1965. 85 p. (M. J. Barnes)

Common errors of beginners were determined by check list returns from 40 golf experts. The 9 common errors were: swaying, pointing elbow back, bending left arm, extending and dipping body, humped wrist, outside to inside swing, weight back during follow through, lack of pivot, and false pivot. The film included examples of efficient swings by an advanced golfer, swings by beginning golfers showing single errors, and swings by beginning golfers showing typical combinations of errors. A teaching guide was also developed as a further basis for helping prospective golf teachers recognize common errors of beginning women golfers.

188. MISTA, Nancy Josephine. Attitudes of College Women Toward Their High School Physical Education Programs. Ph. D. in

Physical Education. 1965. 109 p. (M. G. Scott)

A revised Plummer Attitude Inventory and background questionnaire were administered to 1126 freshman college women in private colleges in Iowa during September 1964. Significant differences in attitude toward physical education were found between those earning and not earning athletic letters, participating and not participating in organized physical activities outside of high school, from farms and cities, from small and large high schools, choosing and not choosing teaching careers, rating themselves above and below average in physical skills, and enjoying and not enjoying their high school physical education. Significant differences were not found between those having and not having physical education in high school, having a man or woman teacher in physical education, taking or not taking physical fitness tests, attending parochial or public schools, having less than 2 or more than 4 hours of physical education per week, and being from Iowa or other states.

189. PAYNE, L. Anne. The Influence of Strength on Speed of Movement in Eighth Grade Girls. Ph.D. in Physical Education. 1965. 100 p. (M. G. Scott)

The subjects were divided into two groups having isometric or isotonic arm and shoulder girdle exercises for half the period and low organization games for the other half and a third group having low organization games which used primarily the lower extremities for the whole period. Tests of static strength and speed of movement were given before and after the 5-week training program. Static strengths showed few significant relationships with speed of a dominant arm movement following the program, so static muscular strength had a relatively minor role in influencing the maximal speed of arm movements.

190. REID, James Gavin. Static Strength Increase and Its Effect Upon Triceps Suræ Reflex Time. M.A. in Physical Education. 1965. 62 p. (L. E. Smith)

Sixty male Caucasian students with an age range of 18-20 years were divided into 2 equal groups. The experimental group performed plantar flexion against isometric and isotonic resistance for 40 min. twice a week for 6 weeks. Five recordings of triceps suræ reflex time were obtained on the initial and final tests with a Burdick FM-1 Photomograph and Electrocardiograph and a constant force reflex hammer. The experimental group showed a significant 7.5 percent decrease in reflex time, presumably from an increase in static strength.

191. ROSS, Jimmie L. The Changes in Physical Fitness of Girls after Two Semesters of Physical Education. M.A. in Physical Education. 1965. 54 p. (M. G. Fox)

Test items from the Iowa Motor Fitness Test and the AAHPER Youth Fitness Test were administered to junior and senior high school girls before and after two semesters of physical education and after a period with no formal physical education. Significant gains occurred in abdominal strength, power, coordination, flexibility, and speed during the semesters of physical education, but a significant loss in physical fitness followed the period of non-participation.

192. RUBY, Mary E. Comparison of Selected Endurance Tests for College Women. M.A. in Physical Education. 1965. 99 p. (M. G. Scott)

Height, weight, and leg length were measured on 75 women volunteers from 5 sections of the basic Movement Principles course, and 60-second chair stepping, 30-second grasshopper, 30-second squat thrust, and 60-second bicycle ergometer tests were administered. Reliability was determined by test-retest. The chair stepping, grasshopper, and squat

thrust tests showed low correlations with the bicycle ergometer test. The correlations between endurance and anthropometric tests tended to be low, negative, and not significant except for the correlation for the bicycle ergometer test with height and weight.

193. STOLL, Thomas William. The Effectiveness of a Special Program of Exercises on Eye-Hand Coordination in Children with Cerebral Palsy. M. A. in Physical Education. 1965. 31 p. (G. M. Asprey)

Data were collected on 10 children, age 5 to 15 years, concerning mental age, IQ, and medical diagnoses. They were divided into equated groups on the basis of the mean of 4 trials each with the right and left hand on a pursuit apparatus, and the experimental group had special eye-hand coordination exercises for 10 weeks. Retests with the pursuit apparatus showed that the control group improved significantly (.03 level), but the experimental group did not (.08 level). The final mean difference between groups was not significant (.16 level), so the special exercise program appeared ineffective.

194. TILLOTSON, Joan S. Construction of a Film Series: Movement Education in Physical Education. Ph. D. in Physical Education. 1965. 148 p. (M. G. Scott)

A 17-min. film presenting concepts and three 8- to 12-min. films of demonstration lessons were prepared for the pre-service and in-service training of elementary school teachers.

195. VANDERLIP, Dolly D. The Development of an Instructional Film-strip on First Aid for Trip Campers. M. A. in Physical Education. 1965. 132 p. (M. G. Fox)

A color filmstrip with a narrative record, supplemented by a teaching manual, was prepared as an instructional aid for trip campers. The first aid topics included: first aid kit contents, wounds and bleeding, infection, shock, fractures, sprains, blisters, snake bites, irritation caused by poisonous plants, food poisoning, transportation, water accidents, and general directions.

196. WATTS, Jean L. Junior High School Physical Education Programs for Girls in the State of Illinois. Ph. D. in Physical Education. 1965. 198 p. (M. G. Scott)

Questionnaire returns from 420 junior high schools in Illinois showed that 27 percent had below average programs, more information was desired about fitness and grading, and the primary problems were lack of time, lack of facilities, and large classes. A 70-page general curriculum guide covering planning a balanced program, administration and teaching, and program evaluation as a means of improvement was prepared for the Educational Bulletin Service at Northern Illinois University.

197. WORKMAN, Donna Jo. A Comparison in Selected Skills of Children Taught by the Physical Education Specialist and Those Taught by the Classroom Teacher. Ph. D. in Physical Education. 1965. 110 p. (M. G. Scott)

Five tests involving running, jumping, and ball handling were administered to approximately 200 grade 6 children taught by a physical education specialist in 8 schools and an equal number taught by classroom teachers in 9 schools. The girls taught by the specialist were significantly better on all 5 tests and the boys were significantly better on 4 of the 5 tests.

Louisiana State University, Baton Rouge, Louisiana (J. K. Nelson)

198. ABDO, Samia H. A. Leg Strength and Height-Weight Factors in

Relation to Cardiovascular Efficiency of College Women. Ph. D.  
In Physical Education. 1965. 53 p. (J. W. Kistler)

Height, weight, chest width, pelvic width, leg strength, and 3-minute cardiovascular efficiency were measured and intercorrelated on 198 women at Louisiana State University. Excess weight had the greatest deleterious effect on cardiovascular efficiency. Leg strength correlated positively with step test performance. The correlation was definitely higher for subjects with normal weight, but body build affected cardiovascular efficiency more than leg strength in underweight and overweight subjects. The linear correlation between cardiovascular efficiency and ponderal index was significant, but the regression line levelled off for women with high cardiovascular efficiency. Body build in terms of ponderal index appeared less important for high cardiovascular efficiency than strength, muscular endurance, general physical fitness, and exercise habits.

199. BASS, Buford H. The Effects of Isometric Exercises on Underhand Throwing Ability. Ed. D. In Physical Education. 1965. 84 p. (F. A. Drury)

Eighty college males were tested before and after a 6-week training period in throwing a softball for maximum distance 80 times at the rate of one throw every 6 sec. Arm strength in a throwing position and leg strength in the push-off position for the underarm throw were also measured before and after the training period. Equated groups trained with either isometric exercises only, the throwing test 3 days a week, throwing test plus isometric exercises, or no special practice (control). Additional isometric exercise produced greater gains than throwing alone. Isometric exercise increased strength significantly, and throwing alone produced a significant increase in leg strength.

200. CRAGIN, Wesley E. A Comparison of Two Methods of Teaching Beginning Tennis. M. S. In Physical Education. 1965. 54 p. (J. K. Nelson)

Women (N = 38) in beginning tennis classes were assigned to groups taught by the traditional method or with heavy emphasis on special drills designed to provide more intensive and sustained practice on basic skills. The Broer-Miller Forehand-Backhand Test was administered in the 12th, 24th, and 36th class meeting. A comparison of mean gains showed no significant difference between the methods. Unusually adverse weather forced the groups indoors, and limited space made the class activity more similar than planned.

201. JOHNSON, Barry L. The Effects of Applying Different Motivational Techniques During Training and in Testing Upon Strength Performance. Ed. D. In Physical Education. 1965. 85 p. (J. K. Nelson)

Subjects (N = 120) randomly assigned to 4 groups performed one isometric press 3 days a week for 6 weeks. The group treatments differed in the number of motivational techniques applied during training. After the final training test, all subjects were tested under a special motivational situation resembling an athletic contest. The training and test scores increased according to the number of motivational factors utilized. The final test under contest-like conditions showed significant gains in all groups over those achieved during training. Students above and below average in their initial strength responded similarly to the motivational techniques.

202. MOORE, Robert W. A Comparison of a Vertical Jump Test with the Harvard Step Test in Measuring Cardiovascular Efficiency. M. S. In Physical Education. 1965. 67 p. (J. K. Nelson)

A vertical jump test, consisting of 50 jumps to touch a mark 12 in. above the subject's reach at 66 jumps per min. and the Harvard Step Test were administered on separate days to 50 college men. Starting 1-, 2-, and 3-minutes after each test, 30-sec. carotid pulse counts were taken, and correlations were computed between the pulse recovery rates on the two tests. Recovery rates for the short duration jump test and the 5-min. step test correlated highly but the step test more nearly approximated the desired limit of 160 beats per min. The ability of subjects to maintain the vertical jump exercise was not related to their ability to maintain the slower cadence of the step test. Pulse recovery counts from 1 to 1.5 min. were sufficiently accurate indexes of cardiovascular fitness for both tests.

University of Maryland, College Park, Maryland (J. H. Humphrey)

203. ARNOLD, Jay. The Relationship of Participation in Varsity Athletics to Certain Aspects of Self-Control Among High School Boys. M. A. in Physical Education. 1964. 82 p. (W. R. Johnson)
204. BIRD, Anne Marie. A Comparative Study of Certain Personality Characteristics of College Women Participating in Basketball and Modern Dance. M. A. in Physical Education. 1965. 49 p. (W. R. Johnson)
205. BURLAS, Edward B. Effects of a Physical Activity Program Upon the Body Image and School Adjustment of Handicapped Children. M. A. in Physical Education. 1964. 48 p. (W. R. Johnson)
206. DUBOIS, Bruce C. A Comparative Study of Selected Primary Grade Stunt and Tumbling Activities. M. A. in Physical Education. 1965. 99 p. (J. H. Humphrey)
207. LANEVE, Ronald S. The Effect of Planned Physical Activity Upon Body Image and Certain Behavioral Variables of Retarded Boys. M. A. in Physical Education. 1964. 59 p. (W. R. Johnson)
208. MULLIN, Daniel T. The Expressed Judgments of College and University Presidents Concerning Preferred and Minimum Qualifications for the Chief Administrative Officer of Physical Education Compared to the Qualifications Possessed by Such Chief Administrative Officers. Ph. D. in Physical Education. 1964. 162 p. (J. H. Humphrey)
209. REYNOLDS, Wilmer E. Training and Conditioning Swimmers by a General and an Experimental Sprint Method to Determine the Effect of Each on Speed of Swimming Fifty Yards. M. A. in Physical Education. 1964. 73 p. (B. F. Husman)
210. THOMAS, Francis B. A Study of Fifth Grade Boys' and Girls' Likes or Dislikes of Selected Physical Education Activities. M. A. in Physical Education. 1964. 34 p. (J. H. Humphrey)

University of Michigan, Ann Arbor, Michigan (J. A. Faulkner)

211. ADAMS, Susan Harrigan. A Choreography: Motif with Innovation. M. A. in Physical Education. 1965. 51 p. (E. E. Pease)
212. BARCLAY, Jack Kenneth. The Physical Fitness of Male Physical Education Teachers. M. A. in Physical Education. 1965. 85 p. (J. A. Faulkner)



213. DELANGHE, Gay Ann. A Choreography: Odyssey II. M.A. in Physical Education. 1965. 37 p. (E. E. Pease)
214. HERMISTON, Ray T. Programming College Physical Education Classes. M.A. in Physical Education. 1964. 69 p. (J. A. Faulkner)
215. MC ARDLE, William Daniel. The Reliability and Metabolic Stress of Endurance Swimming in the Laboratory Rat. Ph.D. in Physical Education. 1965. 85 p. (J. A. Faulkner)
216. MERIAN, Suzanne. Relationship Between Lean Body Mass and Heart Rate Response to Exercise. M.A. in Physical Education. 1965. 50 p. (H. J. Montoye)

University of Montana, Missoula, Montana

(B. J. Sharkey)

217. BJORGUM, Richard K. Breathing Oxygen as an Aid to Recovery After Exertion. M.S. in Physical Education. 1965. 35 p. (B. J. Sharkey)

Six cross-country runners and 6 untrained college men ran on the level at 8 mph on a motor-driven treadmill for 5 min. before and after inhaling in random order pure oxygen from a tank, atmospheric air from a tank (placebo), or room air for 1 min. Test and recovery pulse rates were recorded, and recovery oxygen consumption was measured for 3 min. after the second run. The untrained men showed a decrease in pulse rate during and oxygen consumption after oxygen inhalation, but the differences were not significant.

218. CORBRIDGE, Lynn O. Pulmonary Ventilation as a Predictor of Energy Expenditure. M.S. in Physical Education. 1965. 41 p. (B. J. Sharkey)

Individual regression equations predicting pulmonary ventilation from pulse rate were computed from data obtained by having 4 college men walk at 3.5 mph on a motor-driven treadmill at 6 inclinations. The precision of prediction was tested against riding a bicycle ergometer, hand cranking the ergometer, and walking on the treadmill while holding a weight. Pulmonary ventilation appeared a useful predictor of energy expenditure if a 15 percent error was acceptable and if the work task closely approximated the activity on which the regression equation was based.

219. MARTENS, Rainer. Relationship of Phasic and Static Strength and Endurance. M.S. in Physical Education. 1965. 49 p. (B. J. Sharkey)

After pre-training on a test table that provided accurate reproduction of test conditions, 20 college men were tested twice for static and phasic strength, static and phasic endurance, static strength and endurance, and phasic strength and endurance. The only measures that correlated significantly (.77) were phasic and static strength, but the mean difference of 11.8 lb. which was significant at the .01 level suggested the need for separate strength tests when comparing strength gains.

220. McDONALD, Joseph F. The Pulse Rate as a Predictor of Energy Cost While Doing Selected Work Tasks. M.S. in Physical Education. 1965. 45 p. (B. J. Sharkey)

221. OWEN, Guy M. A Comparison of Predicted Energy Expenditures with Actual Energy Expenditures While Walking on a Motor-Driven



Treadmill. M.A. in Physical Education. 1965. 59 p.  
(W. Sinning, B. J. Sharkey)

222. THOMPSON, Steven H. The Physiological Cost of Using Respiratory Protective Devices and their Relationship to Air Flow Resistance. M.S. in Physical Education. 1965. 58 p. (B. J. Sharkey)  
The inspiratory and expiratory air flow resistance of the 3 respiratory protective devices were measured at 85 and 170 liters/min. Five male college students exercised for 5 min. at 0, 5, and 10 percent grades while wearing no device or one of the 3 in random order. Pulse rates while wearing the devices were not significantly different from the control condition, but post-exercise oxygen consumption was significantly elevated and positively related to the air flow resistance.

University of New Mexico, Albuquerque, New Mexico (A. H. Seidler)

223. CORBIN, Charles Bennett. The Effects of Mental Practice on the Development of a Unique Motor Skill. Ph.D. in Physical Education. 1965. 80 p. (A. H. Seidler)

Comparison of mental, physical-mental, and physical practice showed that mental practice alone did not facilitate skill development but physical-mental and physical practice improved performance. No interaction between the type of practice and the skill level was evident, and no type of practice seemed to have a more lasting effect. Physical practice seemed necessary if mental practice was to facilitate skill development.

State University of New York at Buffalo, Buffalo, New York

(C. R. Meyers)

224. BEISMAN, Gladys L. The Effect of Rhythmic Accompaniment During Teaching of Fundamental Motor Skills to Elementary School Children. Ed.D. in Physical Education. 1964. 272 p. (C. R. Meyers)

Quantitative tests and quality ratings of throwing, catching, climbing, balancing, jumping, leaping, dodging, bouncing, and striking were administered before and after practice with and without rhythmic accompaniment to 607 boys and girls in grades 1 through 6. Sixty-six treatment by sex analyses of covariance were made with pre-test scores as the covariate. Rhythmic accompaniment during teaching and practice produced more improvement and a relaxed and enjoyable atmosphere for both boys and girls. Performance and ratings increased steadily over the grades, but boys made greater gains than girls in throwing and bouncing at some levels.

New York University, New York City

(R. A. Weiss)

225. BOOKHOUT, Elizabeth Circle. An Observational Study of Teacher Behavior in Relation to the Social-Emotional Climate of Physical Education Classes. Ph.D. in Physical Education. 1965. (R. A. Weiss)

Grade 9 girls' physical education classes (36) and their respective women teachers in North Carolina public schools were observed in action 4 times each for 30 min. Inventories completed by pupils indicated that the climate of classes ranged from supportive to defensive. The more reliable items of teaching behavior and class climate were factor analyzed. One common pattern of teaching behavior, called "Integrative Behavior," was significantly related to supportive climate and contained

a relatively large amount of teaching behavior characterized as: teacher smiling, encouraging, expressing concern, allowing planning, answering questions, and moving freely among pupils. Another pattern, "Restraining Direction," was significantly related to defensive climate and involved: using fixed groupings, leading mass activity, pointing out errors, disapproving, threatening, and criticizing. The other patterns which were definite but had a negligible relation to climate were designated "Active Direction," "Skill Perfection," "Participation," and "Aloofness."

North Carolina College, Durham, North Carolina

(R. E. Townes)

226. FOUST, T. M. A Study to Determine the Physical Status of High School Boys with Suggested Activities for the Underdeveloped. M.S. in Physical Education. 1965. 65 p. (R. E. Townes)

The Indiana Motor Fitness Test, Index I, was administered to 64 boys in grades 9, 10, 11, and 12. Seniors showed the greatest arm and shoulder strength and endurance. Sophomores showed the least arm and shoulder strength. Freshmen and sophomores were superior in leg strength and power. None of the differences was significant at the .01 level.

227. LANE, Georgia C. The Relationship Between Physical Fitness and Motor Ability Before and After a Physical Fitness Program for High School Girls. M.S. in Physical Education. 1965. 52 p. (R. E. Townes)

The AAHPER Youth Fitness Test and the Humiston Motor Ability Test were administered to 69 grade 9 girls, age 14 years, before and after a planned physical fitness program. The group improved on both tests, and the correlation between physical fitness and motor ability was higher after the planned fitness program.

228. McKNIGHT, A. W. The Effects of Isometric Exercise and Weight Training on the Development of Strength. M.S. in Physical Education. 1965. 52 p. (R. E. Townes)

Two groups of 30 high school boys each were matched on McCloy's Classification Index. Intercollegiate Strength Test results showed no significant difference between groups after 6 weeks training.

University of North Carolina, Greensboro, North Carolina

(R. McGee)

229. BLUCKER, Judith Ann. A Study of the Effects of Leg Strengthening Exercises on the Vertical Jumping and Speed of Running of College Women. M.S. in Physical Education. 1965. 73 p. (G. Hennis)

Subjects were 29 women physical education majors who were randomly selected and assigned to an exercise or control group after leg strength was tested with a dynamometer, vertical jump with the Modified Vertical Power Jump Test, and running speed with a specially designed electronic timer. The exercise group practiced leg strengthening exercises 3 times weekly for 4 weeks with progressively increasing repetitions, and both groups were retested. The exercise program improved leg strength significantly but had no significant effect on vertical jump ability or running speed. Leg strength was not correlated significantly with vertical jump or running speed on either test.

230. CICONTE, Anita Louise. Allegro in Jazz. M.F.A. 1965. (V. Moomaw)

A dance concert expressing the joy of moving was choreographed in the

jazz idiom, the movements and the feelings of the movements determining what happened next. Teaching sessions provided an opportunity to determine whether the choreographer's movement ideas could be perceived and executed by the dancers. Movements which were superfluous to the imaginative expression of the theme were eliminated, and the dancers were taught movements that felt right physically and emotionally so that they might communicate successfully the main intent of the dance to an audience.

231. EASTRIDGE, Marilyn. The Development of a Progression of Synchronized Swimming Skills to Accompany the American Red Cross Beginner Swimming Progression. M.S. in Physical Education. 1965. 75 p. (R. McGee)

Girls who were 8-10 years old and beginning swimmers were taught in 4 classes of 12 each for 14 half-hour lessons. Sculling head first with the hands at the sides, the tub, log roll, flying porpoise, front tuck somersault, and back tuck somersault were taught along with the ARC Beginner swimming progression. During the last class 32 girls were rated on swimming and synchronized swimming skills by 5 judges. Performing synchronized swimming skills had a significant positive correlation with general swimming ability. Girls of poor ability, especially fear cases, had little success with synchronized swimming skills, and attempting them seemed to increase fear and tenseness. Sculling, the log roll, and the back tuck somersault were performed with about equal success by swimmers of average ability or slightly below, but the tub proved harder for them.

232. FIELDS, Gladys Westray. A Survey of Physical Education Services Provided Educable Mentally Retarded Children in Public Schools in Selected Communities. M.Ed. 1965. 43 p. (M. Leonard)

A 3-part questionnaire was sent to 49 persons responsible for physical education, special education, and/or administration. Part I covered current provisions for exceptional students and particularly educable mentally retarded children with special reference to whether they had special classes and, if so, how they had been developed, taught, and evaluated. Part II covered opinions concerning advantages and disadvantages in adapting the physical education program for EMR children. Part III concerned opinions regarding possible problems resulting from either special classes or having EMR children participate in the regular program with "normals."

233. GASKIN, Lynne Pearsall. The Effect of Training for Dynamic Balance on Bowling Performance. M.S. in Physical Education. 1965. 101 p. (M. Riley)

The experimental group (15) received training for dynamic balance in addition to regular bowling instruction; the control group (12) received only bowling instruction. The Bass Test and the Sideward Leap Test were used as measures of dynamic balance which was tested after 5 and 21 lines had been completed. The totals of the first and last 5 lines were used as pre- and post-test measures of bowling ability. Training for dynamic balance improved performance significantly on the Bass Test but not on the Sideward Leap Test. Bowling performance at the beginning level was not improved significantly by training for dynamic balance.

234. GRAVLEE, Gayle. A Comparison of the Effectiveness of Two Methods of Teaching a Four-Week Unit on Selected Motor Skills to First Grade Children. M.S. in Physical Education. 1965. 86 p. (M. Riley)

The movement exploration method involved asking questions and posing problems that required movement, and the games approach involved demonstration, explanation, and practice. Pre- and post-tests were

given weekly with 4 lessons intervening. Movement exploration was apparently more effective for improving ability on a modification of Johnson's agility run and in the standing broad jump (which required 12 trials to determine ability at this age). Neither method was more effective for throwing and catching or batting.

235. HAMBRIGHT, Joanne. A Written Knowledge Test for the Fifth Grade Students at Archer Elementary School. M.S. in Physical Education. 1965. 76 p. (M. Riley)

A preliminary test was constructed with the assistance of the classroom teacher and administered to 26 students after a 3-week unit on jumping and ball handling. A revised test was evaluated by 3 judges and 3 grade 5 classroom teachers. After incorporating suggested changes, this was administered to 103 grade 5 students who were also rated by the teachers and given skill tests. The revised written test had a low positive correlation with the ratings and a non-significant correlation with the skill tests, although it was considered valid and proved fairly reliable. The written test had possibilities as a supplement in evaluation. The grade 5 students seemed interested in obtaining knowledges and appreciations as well as competence in jumping and ball handling.

236. HUTSON, Margaret Fortune. The Relationship of Anxiety Level to Learning Skills in Beginning Horseback Riding. M.Ed. 1965. 94 p. (C. Ulrich)

Case studies were made of 6 undergraduate women participating in 6 weekly riding lessons to determine whether fear in students with high anxiety levels could be reduced and whether differences in riding skill correlated with anxiety levels. Information was gathered from questionnaires regarding riding experience, 4 forms of the IPAT Eight-Form Parallel Anxiety Battery, judgments of riding skill, anecdotal records during riding lessons, and a riding knowledge test. All subjects showed a decrease in anxiety between the first and third lesson. Five subjects increased in riding skill from the second to the sixth lesson at the .01 level of confidence. Anxiety tended to decrease as skill increased.

237. KING, Carolyn Cox. The Turmoil and Anxiety of Creating "Up to Heaven." M.F.A. 1965. (V. Moomaw)

Negro spirituals were selected so that the first 4 could be choreographed with uniquely appropriate movements and qualities which could be recapitulated during the fifth to summate the complete idea of "Up to Heaven."

238. LA PLANTE, Marilyn. A Study of the Problem-Solving Method of Teaching Bowling. M.S. in Physical Education. 1965. 74 p. (M. Riley)

Subjects from 3 service classes in bowling were selected on the basis of past experience and the totals of their first 5 games. During 31 class periods, 21 students in two classes were taught by the problem-solving method, and 12 students in a third class were taught by customary methods. The Drinkwater Attitude Inventory was administered before and after the class work. Final bowling scores were the totals of games 9 to 13. Both methods resulted in favorable skill development. A favorable attitude toward physical education was maintained during the problem-solving instruction. Students seemed more interested in and responsive to the problem-solving method although it was not superior for developing skill.

239. MCCUTCHEON, Sallie. The Construction of an Objective Basketball Knowledge Examination for College Women. M.S. in Physical Education. 1965. 66 p. (M. Leonard)

Fifty four-choice questions were constructed covering rules, skills, terminology, history, etiquette, safety, etc. Rules questions were based on the 1964-65 DGWS Basketball Guide. Five schools returned 303 answer sheets. Item analyses were made with the Flanagan Method using the upper and lower 29 percent with double weight for the extreme 9 percent. The mean difficulty rating was 67 percent. Test scores ranged from 45 to 20 with a mean of 33.0 and a standard deviation of 8.13. The reliability according to Kuder-Richardson formula was .852.

240. NEUMAN, Bonnie J. The Effect of a Self-Instructional Program of Badminton Rules on the Knowledge and Playing Ability of Beginning Badminton Players. M.S. in Physical Education. 1965. 91 p. (C. Hennis)

The experimental group (19) was taught badminton rules by programed instruction and the control group (17) was taught in a class by the instructor. The groups were initially equated in badminton ability and experience. The Miller Wall Volley Test was administered during the third and fourth class period and readministered during the 30th class period. Knowledge was measured at the end by a 43-item examination with 18 questions pertaining to rules. Subjective opinion concerning programed instruction was obtained by questionnaire following the knowledge test. Programed instruction was as effective as class presentation for knowledge of rules but less effective for total badminton knowledge. Playing ability was not affected by the method of rules instruction. Students in the experimental group reacted favorably to programed instruction.

241. SHEARER, Catherine Haworth. The Application of Experience to the Creative Process. M.F.A. 1965. (V. Moomaw)

The inspiration for this thesis dance came from the impact of Murder in the Cathedral by Eliot. The dance was influenced by the music chosen as the accompaniment. Yet the movement to express the dance idea came as the result of arduous experimentation and periods of latent creative thinking which led to an onrush of ideas. When inspiration ceased, the author depended on knowledge of the dance craft. The ability to create paralleled personal emotional states.

242. STEPHENS, Martha. A Study of the Effects of Isotonic and Isometric Exercise on Selected Physiological Variables. M.S. in Physical Education. 1965. 75 p. (C. Ulrich)

Oxygen consumption, hemoglobin concentration, systolic blood pressure, diastolic blood pressure, and heart rate were measured under base homeostatic, isotonic exercise, and isometric exercise conditions of 1-min. duration with a load of 10 lb. Both exercise conditions elicited changes over the base condition with the isotonic condition having greater exercise stress. An increase in hemoglobin concentration was not anticipated under the exercise conditions, but the isotonic condition resulted in greater hemoconcentration than the isometric. The isometric condition increased systolic blood pressure more than the isotonic.

243. SWIM, Carol Lee. A Comparative Study of Body Sway in the Anterior-Posterior Plane with Reference to the External Malleolus in Females Ages Three Through Twenty-Two. M.S. in Physical Education. 1965. 68 p. (C. Ulrich)

The subjects (118) were weighed, and the distance from the posterior border of the external malleolus to the anterior angle iron was measured with the subject standing on the balance board. Scale readings were taken with the subject standing quietly at 15, 30, 45, and 60 sec. during 4 one-minute tests. The Reynolds-Lovell technique was used to determine body sway. The mean gravity lines of the pre-adolescent and adult

groups differed significantly, probably because of morphological differences. No generalizations could be made concerning the location of the line of gravity in different age groups. Individuals exhibited different patterns of sway.

244. VAUGHAN, Jo Lasseter. Birthright. M.F.A. 1965. (V. Moomaw)

Birthright, an individual expression of an unconscious knowledge of factors existing in the experience of the human race, was choreographed in 5 parts entitled Separate People, The Character, Exploration, Confluence, and The Ritual. The 4 dancers—Round-man, Pogo-man, Square-man, and the Character—revealed their characteristics through gestures and movements that were circular, multi-angular, and square. The three geometrical shapes were repeated in the sets. The composition acknowledged a supreme being, stated that life has meaning, and used archetypal images and ideas pertaining to the 20th century but uttered in art pieces throughout the ages.

245. WILLIAMS, Julia Ann. The Effects of Exercise (Training) on the Basal Concentration of ATP in Muscle Tissue. M.S. in Physical Education. 1965. 107 p. (C. Ulrich)

The experimental group had a daily, progressive program of enforced swimming. ATP concentration in the muscles was assessed by spectrophotometry with luciferin-luciferase serving as the bioluminescent source and the peak height indicating the amount of ATP in the tissue. The exercise animals showed a definite trend toward an increased basal concentration of ATP, but the change was not significant in comparison with the controls.

246. WOOLEN, Sandra Ann. Construction of a Unit of Programed Instruction in Health Education. M.S. in Physical Education. 1965. 165 p. (R. McGee)

A pilot study was conducted to determine needed revisions in the programed unit of the human circulatory system and the associated knowledge test. Subjects were pre-tested, given the program to complete outside of class, and re-tested. The subjects also evaluated the method and the specific program. The standard advocated by the American Institute for Research was used as a criterion for program validation. The program proved valid and the knowledge test demonstrated curricular validity and adequate reliability. The findings indicated that programed instruction was a very effective method of learning health education material.

247. ZEH, Brenda Sue. A Comparison of the Efficiency of Four Styles of Breast Stroke. M.S. in Physical Education. 1965. 81 p. (R. McGee)

Four intermediate swimming classes, totalling 53 college women, were taught 4 different breast stroke styles which combined either a horizontal or a diagonal arm pull with a wedge kick or a whip kick. Skill ratings were obtained after 6 weeks of instruction. Power was measured as the distance covered in 5 complete breast strokes. Stroke efficiency was measured in terms of O<sub>2</sub> uptake over the sitting, resting rate after a 50-yd. breast stroke swim. The horizontal pull and wedge kick proved significantly more powerful than the other combinations. Unreliability of the O<sub>2</sub> uptake data precluded efficiency comparisons.

Northern Illinois University, DeKalb, Illinois

(J. C. Mirchem)

248. BREMBERG, Charlene E. A Study to Determine the Relationships

of Certain Anthropometrical, Motor Ability, and Reaction-Movement Measurements of High School Girls. M.S. in Education. 1965. 59 p. (J. C. Mitchem)

Seven anthropometrical characteristics, 4 motor ability tests, and 18 reaction-moment times were recorded for 65 high school girls. Correlational analysis showed little relationship existed between the anthropometrical, motor, and reaction-movement variables.

249. HEIN, Shirley E. Illustrated Techniques for Beginning and Intermediate Tumbling Stunts for High School Girls. M.S. in Education. 1965. 51 p. (J. C. Mitchem)

Photographs were used to illustrate the detailed analysis of beginning and intermediate tumbling skills as well as the correct spotting techniques. Spotting techniques were adapted to the anthropometric differences found in high school girls.

250. FEDDELER, Caryle. Programed Circuit Bowling. M.S. in Education. 1965. 106 p. (E. C. Lane)

A study was designed to evaluate empirically the effectiveness of programed circuit bowling. Programed circuit bowling allowed for individual differences, provided motivation and interest for the subjects, and created an entirely different atmosphere of learning than was generally found in a physical education class.

251. NETTLETON, Louise F. Problems Encountered by Women Physical Education Teachers of the North Eastern District of the State of Illinois. M.S. in Education. 1965. 70 p. (M. M. Duncan)

A questionnaire was sent to 100 physical education teachers to determine the most frequently encountered personal problems of high school girls. The analysis indicated that the following areas were of great concern to high school girls: weight-figure control and general appearance; preferential dating, breaking of dates, and getting acquainted with boys; personal adjustment; getting along with parents and being permitted to make decisions; and learning what opportunities and advantages the small college had to offer.

Ohio State University, Columbus, Ohio

(D. K. Mathews)

252. ADAMS, Barbara Ann. Students' Ratings in the Parma Public Schools, Parma, Ohio, of Selected Factors Which May Influence the Smoking Habit. M.A. in Health Education. 1964. 127 p. (M. K. Beyrer)

Students in Parma, Ohio, rated 25 questionnaire items to determine factors which might prevent young people from starting the smoking habit. The relationship between health and smoking, the influence of friends, and the enforcement of the law which prohibits the sale of cigarettes to minors were considered important deterrents.

253. ANDES, Anne G. Some Health Misconceptions of Selected Adult Groups of Columbus, Ohio. M.A. in Health Education. 1965. (M. K. Beyrer)

The purpose of this study was to construct and administer a questionnaire to determine the prevalence of health misconceptions among the adult public of an urban center. The data indicated that the adults held many health misconceptions and the prevalence varied with age, sex, education, and income.

254. BOCK, William. The Effects of Dehydration Upon the Cardio-respiratory Endurance of Wrestlers. Ph.D. in Health Education.



1965. 64 p. (D. K. Mathews)  
The purpose was to assess effects of a 40-hr. dehydration period upon the cardiorespiratory endurance of a group of 10 university wrestlers. The study was designed to measure effects of dehydration upon maximal oxygen uptake, heart rate, core temperature, and sweat loss by comparing these measurements before and after dehydration.
255. BOWERS, Carolyn O. Gymnastics Skill Test for Beginning to Low Intermediate Girls and Women. M. A. in Physical Education. 1965. 48 p. (D. K. Mathews)  
A gymnastics skill test was constructed for girls to evaluate beginning to low-intermediate performers from junior high school through college. The following events are included: uneven parallel bars, balance beam, free standing floor exercise, side horse vaulting (sideways without pommel), and tumbling.
256. CARROLL, Charles Robert. Application of the Taxonomy of Educational Objectives to Alcohol Education. Ph. D. in Health Education. 1965. 256 p. (W. P. Cushman)  
The Taxonomy of Educational Objectives, which identifies different levels of cognitive behaviors and their interrelationships, was applied to the field of alcohol education as a means of defining specific objectives coupled with appropriate subject matter. Professional judgments were then obtained from two groups of specialists—alcohol educators and school health educators—to determine the appropriateness of 357 defined objectives for general education.
257. COSTILL, David L. The Effects of Water Temperature on Oxygen Consumption, Rectal Temperature, and Heart Rate During Strenuous Exercise. Ph. D. in Physical Education and Physiology. 1965. 89 p. (D. K. Mathews)  
The purpose was to assess the effects of water temperatures of 64, 77, and 90 F on the metabolic responses of man during 3 min. of maximal work. There were no significant differences among the water temperatures.
258. GOODHARTZ, Natalie R. Reliability of the Maximal Oxygen Uptake Test for Women, and Validation of the Sloan and the Hodgkins-Skubic Cardiovascular Efficiency Tests. M. A. in Physical Education. 1965. 49 p. (D. K. Mathews)  
This study was designed to determine the reliability of the maximal oxygen uptake measure in young women, and to validate the Sloan and the Hodgkins-Skubic Step Tests. The findings indicated that the oxygen uptake test was reliable for women and that the two step tests were poor indicators of cardiorespiratory function when compared with the criterion of maximal oxygen consumption.
259. KAUFMAN, Wayne S. The Effect of Football Equipment on Core Temperature, Heart Rate, Oxygen Uptake, and Pulmonary Ventilation of Athletes During Exercise. Ph. D. in Physical Education. 1964. 82 p. (D. K. Mathews)  
Core temperature and water loss while exercising in a football uniform were found to be significantly elevated ( $P < .05$ ) when compared with the results of the scrub suit controls. Heart rates, energy cost, and pulmonary ventilation were increased, although not significantly when the subjects wore uniforms.
260. MARTIN, Barbara G. An Evaluation of the Skill Level, the Physical Education Background, and the Activity Interests of Women Students Enrolled in the Basic Physical Education Program at The

Ohio State University. M. A. in Physical Education. 1965. 65 p.  
(M. Yost)

The background, skill, and interest of Ohio State women in physical education activities was studied. The results indicate that experience in high school was limited mainly to team sports and that their interest was in adult, recreational activities with which they had had little previous experience.

261. MICHELLE, Donald W. The Effect of Increased Internal Muscle Temperature on the Contractile Strength and Muscular Endurance of the Elbow Flexor Muscle Group. Ph. D. in Physical Education. 1965. 70 p. (D. K. Mathews)

The purpose of the investigation was to determine the effect of increased internal muscle temperature on the strength and muscular endurance of the elbow flexors. After the temperature of the biceps brachii was increased from 0.2 to 9.8 F by microwave diathermy, no significant difference was found in the strength and local endurance of the elbow flexors.

262. RICHARDSON, Peggy A. The Relationship in College Women of High and Low Motor Ability to Personality, Aptitude, and Scholastic Achievement. M. A. in Physical Education. 1965. 91 p.  
(M. Yost)

The purpose was to better understand students with problems in learning movement. Highly skilled students surpassed the low skilled in status, sociability, social presence, tolerance, aptitude scores, and scholastic average. They participated more in sports and associated with people who were more sport-minded.

263. RITCHESON, Shirley S. Feuillet's Choreographie and Its Implications in the Society of France and England, 1700. M. A. in Dance History. 1965. 112 p. (M. Mordy)

Dance styles in England and France were compared as reflected in the notation systems of Feuillet, Siris, and Weaver. These texts recorded spectacle and ballroom dance forms prior to 1700 when both were intimately linked to amateur court entertainments. The dancing master also gave instruction in social deportment.

264. SANDER, Irene M. Maximal Oxygen Uptake as a Measure of Validity for the Sloan and Hodgkins-Skubic Cardiovascular Efficiency Tests for Women. M. A. in Physical Education. 1964. 84 p.  
(D. K. Mathews)

By correlating scores achieved in performing the Sloan and Hodgkins-Skubic cardiovascular tests for women with maximal oxygen uptake, the validity of the Sloan Test was shown to be better than that of the Hodgkins-Skubic Test.

265. SHEEHAN, Thomas J. The Construction and Testing of a Teaching Model for Attitude Formation and Change Through Physical Education. Ph. D. in Physical Education. 164 p. (M. Mordy)

The study concerned the experimental employment of a theoretical teaching model designed to modify attitude toward cooperation in a selected physical education activity. The experimental group showed significant attitude change toward cooperation when compared to the control groups used in the study.

266. TURNER, Mary A. Senior Girls' Attitudes Toward High School Physical Education and Their Relationship to Program Quality and Other Factors. Ph. D. in Physical Education. 1965. 218 p.

The quality of 3 high school physical education programs for girls in

Iowa City was related to the attitudes of senior participants toward their respective programs. Pupils perceived physical education as contributing to social development, mental, and physical health but not to physical fitness and attitudes toward physical education.

267. TURVEY, Michael T. The Effects of Change in Environment Upon the Post-test Performance of a Gross Motor Skill. M. A. in Physical Education. 1964. 27 p. (D. K. Mathews)

The purpose was to determine whether adaptation to the visual environment was a determinant of forgetting in motor performance. The results showed that changing the visual field from the pre-test to post-test session was an insignificant factor in performance decrement as reflected in the warm-up phenomenon.

University of Oregon, Eugene, Oregon

(E. R. Reuter)

268. ALLEN, Noah. A Factor Analysis of Selected College Football Ability Test Items. Ed. D. in Physical Education. 1965. 104 p. (H. H. Clarke)

Varsity football players (84) at Pacific College and Lewis and Clark College were rated by coaches and given 34 tests of body size and form, muscular strength and endurance, motor ability, and mental and psychological traits. A principal axes factor analysis with Varimax rotation showed no general factor for football playing ability. The resulting factors and tests with the highest loadings on each were: Body-Bulk—all girth and body bulk measures plus mesomorphy and negative ectomorphy; Relative Muscular Endurance-Power—push-ups, pull-ups, vertical jump, and standing, broad jump; Limb Coordination-Velocity—passing, softball throw, wall bounce, and punting; Ranginess—standing height, ectomorphy, and agility run; Football Intelligence—mathematics aptitude, grade point average, and coaches' ratings; Gross Arm-shoulder Muscular Endurance—Rogers' arm strength; Gross Body Strength—leg lift, back lift, Strength Index, and left grip; and Balance—stork stand.

269. ARNOLD, Dorothy L. A Survey of the Need and Promotional Aspects of a Natatorium at Kodiak, Alaska. M. S. in Physical Education. 1965. 79 p. (W. Smith)

270. BALLOU, Ralph B., Jr. An Analysis of the Writings of Selected Church Fathers to Reveal Attitudes Regarding Physical Activity. Ph. D. in Physical Education. 1965. 137 p. (M. Dougherty)

The viewpoints of 15 early authors were summarized as follows: Activity skills were gifts of God. The gymnasium was sufficient for small boys' activities. Physical activity was profitable, benefited health, and developed a desire to develop wholesome character but should not be used for vain competition or to keep one from worthwhile deeds. Christianity conceived of man as good and of God as interested in man. The Christian athlete abided by the letter and the spirit of the rules. Evil was generated when man acted contrary to God's will. Considering man as evil reflected heretical Gnostic and Manichaeian influences. Extreme asceticism was condemned and a minority favored asceticism. Christianity did not condemn physical activity, only the improper use of it.

271. BEALE, Judith C. The Effect of Two Different Practice Distributions on Acquisition of Skill in the Tennis Forehand and Backhand Drives by College Women. M. S. in Physical Education. 1965. 63 p. (J. Woodruff)

272. BELL, Robert D. The Use of Music as an Aid in the Teaching of

- Selected Badminton Skills. M. A. in Physical Education. 1965. 61 p. (W. Rhoda)
273. BLOOMFIELD, John. Anatomical and Physiological Differences Between Sprint and Middle Distance Swimmers at the Varsity Level. M. S. in Physical Education. 1965. 104 p. (P. O. Sigerseth)
274. BORMS, Jan B. W. Relationships Between Selected Maturity, Physique, Body Size, and Motor Factors, and the Gross and Relative Strength of Ten-, Thirteen-, and Sixteen-Year-Old Boys. M. S. in Physical Education. 1965. 170 p. (H. H. Clarke)
- High, average, and low groups in strength were formed at ages 10, 13, and 16 years by combining the Strength Index, mean of 11 cable-tension strength tests, and the Physical Fitness Index. The higher gross strength groups were larger and more mature, had greater motor ability, and were more mesomorphic. The lower strength groups were larger and had greater endomorphy; the higher groups were superior in motor ability.
275. BOWLES, Charles J. Telemetered Heart Responses to Pace Patterns in the One Mile Run. Ph. D. in Physical Education. 1965. 207 p. (P. O. Sigerseth)
- Heart rate responses of 16 track athletes were measured by radio telemetry while the subjects were at rest, after warm-up, during mile runs at steady, fast-slow, and slow-fast pace, and during recovery. The heart rate response to exercise was very rapid in all pace patterns and reached the exercise level in 220 yd. The fast-slow pace pattern caused a significantly higher heart rate during the test runs. The time for the heart to return within 10 percent of the warm-up did not differ significantly between patterns. Eleven subjects ran the last 440 yd. of the mile fastest with the slow-fast pattern.
276. BURT, Ann G. A Study of the Standards of Norms of the Revised Oregon Motor Fitness Test Battery for Boys and Girls in Grades Four, Five and Six. M. S. in Physical Education. 1965. 65 p. (P. O. Sigerseth)
277. DEVINE, Barry M. Comparison of the Strength, Physical Fitness, Motor Capacity, and Skeletal Age of Fifteen- and Sixteen-Year-Old Delinquent and Non-Delinquent Boys. Ph. D. in Physical Education. 1964. 78 p. (P. O. Sigerseth)
- Delinquent boys (74) were matched with 74 non-delinquent boys from the same schools in Eugene and Springfield, Oregon on the basis of race, chronological age, and socioeconomic status. They were all tested with several strength tests, McCloy's General Motor Capacity Test, and skeletal maturity based on X-rays of the left wrist and hand. The delinquent boys were physiologically more mature but were not significantly stronger, superior in general motor capacity, or superior in the component items of this test.
278. DROWATZKY, John Nelson. Mental, Social, and Maturity, and Physical Characteristics of Boys Underaged and Normal-aged in Elementary School Grades. Ed. D. in Physical Education. 1965. 200 p. (H. H. Clarke)
- This longitudinal study compared intelligence, scholastic achievement, interest, aspiration, peer status, maturity, body size, physique type, strength, and motor ability of underaged and normal-aged boys in elementary school grades. Differences between means were tested for significance with the t ratio. Significant differences between means of

underaged and normal-aged boys in the same grades were obtained in 25 percent of the scholastic achievement, 12 percent of the interest, 15 percent of the peer status, and 56 percent of the physical measure comparisons. The most pronounced differences were found in grade 4 for scholastic achievement and grade 6 for interest. The relative superiority of the normal-aged boys in physical elements prevailed throughout elementary grades. Significant differences between means of boys at the same age in different grades were obtained in 28 percent of the scholastic achievement, 5 percent of the interest, 15 percent of the peer status, and 10 percent of the physical measure comparisons.

279. GESER, L. Richard. Skinfold Measures of Twelve-Year-Old Boys as Related to Various Maturity, Physique, Strength, and Motor Measures. Ph. D. in Physical Education. 1965. 144 p. (H. H. Clarke)

The subjects were 212 twelve-year-old boys. Skinfold measures were taken at the back of the upper arm, inferior angle of the scapula, and midaxillary line at the umbilical level. Skinfold indexes at these points were also used. Amounts of adipose tissue and indexes showed the greatest significant relationship to endomorphy in a positive direction and to ectomorphy in a negative direction; the correlations with maturity, mesomorphy, strength, and motor measures were lower. Using indexes did not improve the significance of the correlations. When skinfold measures were correlated with maturity, strength, and motor measures while partialing out physique components and body-size measures, most of the significant changes were obtained when bulk measures were the constants; generally, the significant changes from zero-order correlations were due to a change in direction of the coefficients with the correlations remaining relatively low. The highest zero-order correlation with a criterion measure of total fat was .963 for abdominal fat; adding arm fat gave a multiple correlation of .995.

280. HAMMER, Willard M. Physiological Changes During Periods of Football Training and De-Training. Ed. D. in Physical Education. 1963. 110 p. (P. O. Sigereth)

University varsity football players (20) were tested in May, August, October, November, and December. The diastolic blood pressure response to a cold pressor test (right hand immersed in ice water at 4 C) dropped significantly from May to October and was significantly lower in October and December than in August. Pulse rates during recovery from a step test were lower in August, October, and November than in May, but the December rates were significantly higher than in August. Standing broad jumps were longest in May and December and shortest in November. Agility run performances improved significantly only from May to August. Coaches' rankings of players correlated significantly only with the broad jump and step test scores.

281. HOCKEY, Robert. Flexibility Changes Following Three Weeks of Participation in a Swimming Program. M.S. in Physical Education. 1965. 49 p. (P. O. Sigereth)

282. HOWER, Marjorie Arline. A Comparison of Maximal-Effort Isometric Muscular Contractions Against Two Types of Resistance. Ph. D. in Physical Education. 1964. 208 p. (P. O. Sigereth)

Electromyographs from the rectus femoris and biceps brachii during maximal isometric contraction against their antagonists and against the more stable and measured resistance of a tensiometer were scored and compared. The electromyographic score against the tensiometer bore little relationship to that against the antagonists. The maximal isometric contractile force against the antagonists was very much lower than against the tensiometer.

283. HOUSTON, Robert. The Nature and Incidence of Injuries to Secondary School Athletic Participants from 1957-1958 through 1959-1960. Ed. D. in Physical Education. 1964. 83 p. (P. O. Sigerseth)

The data were obtained from official insurance claims of the Oregon School Activities Association. With few exceptions, the rate of injuries in high school athletics was rising gradually despite supposed improvements in equipment, facilities, coaching, and rules. The injury rate was higher in larger schools as a group than in smaller schools. The injury rate was highest in football and lowest in track, but wrestling would replace football if injuries continued to increase at the present rate. More injuries occurred in practices than in games, and sprains were the most common injury. Tooth and knee injuries were declining, but concussions were increasing. The lower extremities were injured most often in baseball, basketball, football, and track, but the upper extremities were injured most often in wrestling.

284. HULL, George H. The Effects of Two Isometric Contraction Training Programs on the Physical Training Level of Physical Education Students at Lowell High School. M.S. in Physical Education. 1965. 65 p. (E. R. Reuter)

285. JARMAN, Boyd O. Interrelationships Between Academic Achievement and Selected Maturity, Physique, Strength, and Motor Measures of Fifteen-Year-Old Boys. Ed. D. in Physical Education. 1965. 151 p. (H. H. Clarke)

The academic achievement criteria were the Iowa Tests of Educational Development and grade point averages. The Otis Quick Scoring Mental Ability Test was used for IQ. Subjects (N = 105) were given 21 tests of maturity, physique, body size, muscular strength and endurance, and motor ability. Most of the significant correlations between academic achievement and other variables were negative. The highest zero order correlations were between Wetzel physique channels with mathematics GPA (-.288) and with total GPA (-.264). Correctness of Expression correlated -.251 with bar push ups but ectomorphy correlated .245 with mathematics GPA and .195 with total GPA. Holding IQ constant tended to increase partial correlations. The highest R was .310 for total GPA with Wetzel physique channels and mesomorphy.

286. JORDEN, Jack A. A Longitudinal Look at the Attitudes of Male Students at the University of Oregon Toward Physical Education as an Activity Course. M.S. in Physical Education. 1965. 68 p. (W. Brumbach)

287. KRONQUIST, Roger A. A Modification of the Brady Wall Volley Test for Secondary School Boys. M.S. in Physical Education. 1965. 57 p. (W. Brumbach)

288. MEQUI, Aparicio. Comparison of Performances in the AAHPER Youth Fitness Test Between University of the Philippines Entering Freshman Students and American and Japanese Boys. M. A. in Physical Education. 1965. 54 p. (E. Reuter)

The quartile limits of the American and Japanese norms were used as bases for comparing separately with chi-square the performances of entering Filipino students whose ages were 15, 16, 17, or 18 and over years. Most of the shuttle run times were in the top quartile of both the American and Japanese norms for all age groups, and the 15-year-old Filipino boys performed better than their American counterparts on the other items. However, the performances of Filipino boys were generally lower and performances in the pull-up, softball throw for distance, and sit-up showed considerable deficiency in arm and abdominal fitness.

289. MEYER, Jayne A. Attitudes and Opinions Toward Physical Education for Women. M.S. in Physical Education. 1965. 177 p. (J. Woodruff)
290. MILLER, Doris A. A Comparison of Women Physical Recreation Participants and Nonparticipants with Respect to Selected Personality Factors and Physical Education Backgrounds. M.S. in Physical Education. 1964. 94 p. (P. Ford)
291. MIRWALD, Robert L. A Comparison of the Effectiveness of Training Middle-Distance Runners by the Swedish System and by the Oregon System. M.S. in Physical Education. 1965. 59 p. (W. Brumbach)
292. MOHAHAN, Russell D. The Relationship Between the Miller Analogies Test and the Technical Vocabulary Test. M.S. in Physical Education. 1965. 43 p. (W. Rhoda)
293. OCHS, Linda M. A Study of the Relationship Between Peer Acceptance and Motor Ability of High School Girls. M.S. in Physical Education. 1965. 55 p. (J. Woodruff)
294. PAGE, Joseph T. Comparison of the Academic Achievement of Boys Ten, Thirteen, and Sixteen Years of Age as Related to Selected Non-Academic Factors. Ph.D. in Physical Education. 1965. 131 p. (H. H. Clarke)

Groups equal in IQ but high and low on 20 maturity, body size, strength, motor ability, and personal-social measures were formed from 296 boys in the Medford, Oregon public schools. Grouping by strength and motor ability did not produce significant differences in academic achievement at 10, 13, and 16 years of age, but the low skeletal age groups had significantly higher standard achievement and grade point average. The high sociogram group at 10 years of age had significantly higher grade point average. The high body weight and upper arm girth groups had significantly higher standard achievement test means at 13 years of age, but the low upper arm girth group had significantly higher GPA at that age. At 16 years of age, the low lung capacity, upper arm girth, and Wetzel physique channel groups had significantly higher GPA but the high Mental Health Analysis group was significantly higher on both standard achievement tests and GPA.

295. PARRISH, Marilyn R. Simplification of the Rogers' Strength and Physical Fitness Indexes for Upper Elementary School Girls. M.S. in Physical Education. 1965. 55 p. (H. H. Clarke)
- Data from upper elementary school girls resulted in a multiple correlation of .984 using  $\text{Strength Index} = 1.25 (\text{leg lift}) + 1.01 (\text{arm strength}) + 254$ . Using  $\text{SI} = 1.16 (\text{leg lift}) + 1.07 (\text{arm strength}) + 1.06 (\text{lung capacity}) + 164$  gave an R of .991. Using these multiple regression equations made possible predicting Rogers' PFI accurately with fewer measurements.

296. RADCLIFF, Robert A. Relationships Between the Sixty-Yard Shuttle Run and Various Maturity, Physique, Structural, Strength, and Motor Characteristics of Fourteen-Year-Old Boys. M.S. in Physical Education. 1965. 94 p. (H. H. Clarke)

The 60-yard shuttle run and 15 maturity, physique type, body size, strength, and motor tests were administered to 179 boys. The highest multiple correlation obtained with the shuttle run as the criterion was .650; the test variables were standing broad jump, PFI, and total-body reaction time.



297. REYNOLDS, Robert M. Responses of the Davidson Adjective Check List as Related to Maturity, Physical, and Mental Characteristics of Thirteen-Year-Old Boys. Ed. D. in Physical Education. 1965. 205 p. (H. H. Clarke)

The Davidson Adjective Check List (50 adjectives) and 16 tests of maturity, physique, body size, muscular strength and endurance, motor ability, and intelligence were administered to 215 boys. Mean differences on each test were compared for boys checking and not checking each adjective. Significant differences were obtained for 34 adjectives. Boys checking "cry-baby" were inferior in skeletal age, standing height, bar dips, Rogers' arm strength score, PFI, mean cable tensiometer strength, and standing broad jump. Boys checking "stupid" were superior in chest girth, height times chest girth, and mean cable tensiometer strength, but inferior in reaction time and on the Otis Mental Ability Test: "bossy," "leader," "mean," "nervous," and "sissy" also produced 5 significant differences each. The test variables showing greatest differentiation were: skeletal age and ectomorphy for 9 adjectives each; endomorphy, standing broad jump, and Otis Mental Ability Test for 8 adjectives each; and PFI and 60-yard shuttle run for 7 adjectives each.

298. ROLLO, Ethel T. Factor Analysis of Cable-Tension Strength Tests for Upper Elementary, Junior High, and Senior High School Girls. Ph. D. in Physical Education. 1965. 108 p. (H. H. Clarke)

Cable tensiometer strength tests (25) representing all joints and movements were administered to 72 girls at each level, and the data were factor analyzed separately by the principal axes method with Varimax rotation. The highest principal axes loadings at the 3 levels respectively were .854, .878, and .847, but a general strength factor could only be justified by using many or all tests. Most factors had moderately high loadings for single tests, but the highest loadings were scattered over factors. The relationships of the clustering tests were obscure so strength specificity seemed probable. With 8 rotations at each school level, the 4 strength factors identified at more than one school level were for trunk lateral flexion, trunk flexion-extension, shoulder extension-adduction, and knee flexion.

299. SCHENDEL, Jack S. The Differences Between the Psychological Characteristics of Ninth Grade, Twelfth Grade, and College Athletes and Non-Participants in Athletics. Ed. D. in Physical Education. 1963. 186 p. (P. O. Sigerseth)

The California Psychological Inventory was administered to 334 randomly selected athletes and non-participants at grades 9, 12, and college levels in Eugene and Springfield, Oregon. Grades 9 and 12 athletes were significantly superior on 4 CIP scales, and non-participants excelled significantly on none of the scales. But non-participants at the college level were significantly superior on 8 CIP scales and athletes on only one. Grouping by substitutes, regular players, and outstanding athletes showed no significant difference at the grade 9 level, but a few appeared at the grade 12 and college levels.

300. SCHMOTTLACH, Roger N. The Amount and Degree of Physical Activity in Selected Physical Education Classes at the University of Oregon. M.S. in Physical Education. 1965. 48 p. (E. R. Reuter)

301. SWANGARD, Trevor M. The Effect of Isotonic and Isometric Weight Training Programs on the Development of Bat Swinging, Hitting, and Running Ability of College Baseball Players. M.S. in Physical Education. 1965. 69 p. (E. R. Reuter)

302. TORPEY, James E. Factor Analysis of Potential Maturity Indicators of Sixteen-Year-Old Boys. Ed. D. in Physical Education. 1965. 104 p. (H. H. Clarke)

The 31 of 47 tests of physical dimension, body form, strength, and motor ability on 194 subjects that correlated significantly with skeletal ages were intercorrelated and factor analyzed by the principal axes method with Varimax rotation. The attempt to locate a general maturity factor for advanced-pubescent boys was unsuccessful because the first principal axis factor for ectomorphy-endomorphy had a significant loading (.563) but was not high enough for prediction. The remaining significant factors were lower body strength, body bulk, gross arm and shoulder muscular endurance, and relative sitting height.

303. TREBLE, Gordon F. Changes in Tests of Physical Performance Following Two Different Programs of Swimming Training and Conditioning. M.S. in Physical Education. 1965. 42 p. (P. O. Sigerseth)

304. VINGE, Donald L. The Flexibility of Male Freshman College Students. M.A. in Physical Education. 1965. 71 p. (P. O. Sigerseth)

305. WEST, Elles Charles. An Analysis of Position Sense in Relation to Deranged Quadriceps Muscle and Knee Joint Tissues. Ph. D. in Physical Education. 1965. 94 p. (P. Sigerseth)

The aim was to determine whether proprioceptive sensitivity was disrupted by deranged knee joint tissues involving distension, atrophy, and abnormal length-tension changes of the quadriceps muscle-tendon and joint tissues. Cases were selected where paralysis was graded below fair (3), pain was absent, afferent nerves were intact, age at onset of disease differed, and the length of disablement ranged from 4 months to 55 years. Since individual impressions were similarly acute for all changes in position, rate, and direction of movement, alterations in tension of the tissues did not disturb the acute sense of motion and position of the knee and lower leg. Proprioception was not apparently determined by the anatomical arrangement of the tissues and the particular tension deformation with accompanying stimuli in a causal receptor-effector sequence. Proprioceptive patterns may be established early in life and thus determine the quality of peripheral stimuli.

306. WHITEHILL, M. Patrick. The Effects of Mental Practice on Children's Learning and Retention of Gross-Motor Skills. Ed. D. in Physical Education. 1965. 150 p. (W. Brumbach)

Subjects were 273 boys and girls in grades 1 through 4 who were divided into 3 major groups with 3 subgroups each. Each subgroup performed three different gross motor skills and served as the physical practice group for one skill, the mental practice group for another skill, and the control group for the third skill. After pretesting, the groups had 5 five-minute periods of physical, mental, or no organized practice on their respective skills before being retested. Retests were also administered 4, 8, and 12 weeks later. The similarity of improvement indicated that physical practice was no more effective at this level than mental or no practice. The children retained a relatively high degree of skill for as long as 12 weeks.

307. WORDEN, Cherylee. Bases of Norms for Cable-Tension Strength Tests for Upper Elementary, Junior High, and Senior High School Girls. Ed. D. in Physical Education. 1965. 153 p. (H. H. Clarke)

Twelve anthropometric measures and 23 derived indexes were obtained from 72 girls at each level along with 25 cable tensiometer strength tests

which were averaged as the criterion. The measures, indexes, and strength criterion were intercorrelated. The highest multiple correlations with the strength criterion were: .822, using height times cube root of weight and arm girth/thigh girth at the elementary level; .784, using chest girth times standing height and shoulder width at the junior high level; and .607 using arm girth and shoulder width/hip width at the senior high level. Combining all levels gave an R of .844 using age and weight. Anthropometric measures intercorrelated higher for elementary school girls, but the indexes intercorrelated higher at the junior and senior high levels than at the elementary level.

**Pennsylvania State University, University Park, Pennsylvania**

(E. A. Gross)

308. AMATO, Benjamin P. The Relationship Between Academic Grades and Intramural Participation of Fraternity Men at the Pennsylvania State University. M. Ed. in Physical Education. 1965. 43 p. (C. A. Morehouse and G. A. Stull)

Approximately 2,500 fraternity male students during each of the three academic terms and the total year, 1962-63, at the Pennsylvania State University were classified into 3 participating groups and one nonparticipating group. The results showed significant negative quadriserial correlation coefficients for each phase of the study with the exception of the spring term, 1963. These coefficients, however, were too low to warrant any conclusions that academic grades were affected by intramural participation.

309. ANDERSON, Richard E. The Effect of a Physical Conditioning Program on Body Fat and Body Density. M. Ed. in Physical Education. 1965. 68 p. (C. A. Morehouse and G. A. Stull)

Male college students (86) were equally divided into an experimental and a control group to determine the effect of a 9-week physical conditioning program on total body weight, percentage of total body fat, and body density. The physical conditioning program decreased body fat, increased body density, and reduced subcutaneous fat at specific body sites on the abdomen, chest, and upper arm. Changes in body weight were not significant.

310. DAVIS, Michael Gary. Relative Effects of Two Types of Training on Speed of Swimming. M. Ed. in Physical Education. 1965. 67 p. (R. J. Scannell and G. A. Stull)

No significant differences were found between training with kicking and pulling drills added to whole stroke drills or training with whole stroke alone on the speed of sprint swimming of 46 male subjects from the required physical education program at Pennsylvania State University.

311. DAVIS, Robert G. The Effect of Increasing Interval Training Pace or Distance Repetitions on Swimming Speed. M. Ed. in Physical Education. 1965. 45 p. (E. A. Gross and B. H. Massey)

The effect of two methods of training swimmers was investigated on 64 male college subjects while 25 others acted as a control group. Following a 7-week training program, both experimental groups made significant gains over the control group. However, neither increasing the pace nor increasing the number of repetitions was better than the other for improving crawl stroke swimming speed for 90 yd.

312. EIDEMILLER, Tom H. A Comparison of Interscholastic Athletic Competition in the Junior High Schools of Ohio and Pennsylvania. M. Ed. in Physical Education. 1965. 76 p. (G. A. Stull)

Questionnaires were sent to the principals of 564 junior high schools in Ohio and Pennsylvania to determine the extent of interscholastic athletic competition in the schools, the attitudes of the principals toward interscholastic athletic competition at the junior high school level, and the relationship between the principal's attitude toward interscholastic athletics and the extent of interscholastic athletic competition in his school. Of the 481 schools responding, more than 95 percent had programs of interscholastic athletics. Most of the principals had favorable attitudes toward such competition; however, there was very little relationship between the overall attitude of the principal and the extent of his school's interscholastic athletic competition.

313. EMERY, Calvin W. An Inquiry into the Childhood Sports Participation of Present Major League Baseball Players. M. Ed. in Physical Education. 1965. 44 p. (G. A. Stull)

Questionnaires were mailed to all baseball players whose names appeared on any major league roster as of September 1, 1965. The data provided by the 242 respondents were analyzed according to the percentage of respondents who participated in a number of different sports frequently, moderately, or occasionally during their elementary and high school years. The results indicated that present major league baseball players participated in a relatively wide range of athletic activities during their elementary and high school years.

314. FIELDER, Richard L. An Analysis of Reasons for Selecting Certain Activities in a Required Physical Education Program for College Men. M. Ed. in Physical Education. 1965. 59 p. (G. A. Stull)

Questionnaires designed to determine why students select certain physical education activities were completed by 1,242 students who had participated in 3 or more elective activities in the required physical education program for men at the Pennsylvania State University. The reason given most frequently was that the students felt they would derive enjoyment from a specific activity. Other reasons which appeared frequently were: a desire to improve skill in an activity, previous experience in an activity, and a desire for a vigorous workout. Bait casting and hunter safety were selected by a considerable number of students because the students did not want to change to gym clothes.

315. GREENBERG, Franklyn R. The Effects of Two Interval Training Programs on Running Ability. M. S. in Physical Education. 1965. 57 p. (R. C. Nelson)

Two experimental groups of 30 subjects each, and a control group of 24 subjects were used in the training program which was conducted 3 times weekly for 7 weeks. Both groups trained over distances of 110, 220, and 330 yd. In one group the speed of running was held constant while the number of repetitions of each distance was increased. The second group ran a fixed number of repetitions at a progressively faster speed. Both experimental groups improved significantly over the control group. However, no significant difference in improvement of running ability over a 440-yd. distance was found between the experimental groups.

316. HENGST, Virginia. Predictive Ability of the Modified Springfield Beam Walking Test and a Seventy-Two Foot Balance Beam Walking Test. M. Ed. in Physical Education. 1965. 52 p. (L. Magnusson and H. Lundegren)

Female university students (32) were administered the Springfield Beam Walking Test. Following this, they had 10 practice sessions of 4 trials each in walking a 72-ft. balance beam. These sessions were administered 3 days a week and a record was kept of the distance walked by each

individual on each trial. Correlation coefficients and predictive indexes indicated that one administration of the Springfield Test predicted with 32 percent accuracy balance ability as measured by walking the 72-ft. balance beam after 10 days of practice. At least 6 days of practice on the 72-ft. beam was necessary before ability to walk the beam could be predicted with better than 50 percent accuracy.

317. HOEPNER, Barbara J. Comparison of Motor Ability, New Motor Skill Learning, and Adjustment to a Rearranged Visual Field. Ph.D. 1965. 85 p. (B. H. Massey)

College women (48) practiced for one minute each twice a week for 4 weeks moving chessmen and throwing a ball while wearing and not wearing prismatic glasses. No large relationships were found between motor ability or new motor skill learning and ability to adjust to or compensate for visual rearrangement. The tests were the Scott Motor Ability, Moody's Test of New Motor Skill Learning, and a variation of the Mirror-Box Test of Held and Gottlieb. No significant difference was found between the effect of hand and gross body movement on adjustment to or compensation for visual rearrangement. Wearing prismatic glasses did not result in a consistent amount of visual rearrangement within each subject. Self-movement while wearing prismatic glasses was necessary for adjustment or compensation.

318. HOWELLS, Roberta Ann. The Retention of Endurance in Adult Women. M.S. in Physical Education. 1965. 85 p. (J. D. Lawther)

Women volunteers (19) between the ages of 20 and 40 years, who had participated in a study of endurance development the year previously, participated in this study to determine the amount of bicycle ergometer endurance that was retained, a year after termination of training. Approximately 1/2 of the bicycle riding endurance developed the year previously during an intensive 8-week training regimen still persisted. Also, retraining to the previous year's peak endurance performance required about 3/4 of the previous training time, but continued training did not produce a further increase in endurance performance.

319. JABLE, John T. The Relative Effects of Training with Basketballs of Varying Weights Upon Free Throw Shooting Accuracy. M.Ed. in Physical Education. 1965. 58 p. (G. A. Stull)

On the basis of a pretest with regulation basketballs (21 oz.), 60 male college students were assigned to one of three groups. During the 5-week experimental period, one group practiced with regulation basketballs, the second group used 16-oz. basketballs, and the third practiced with 40-oz. basketballs. Following the training period, all subjects were retested with regulation basketballs. The only significant difference favored the group using the regulation-weight basketballs over the group using the 40-oz. balls. Practice with the regulation basketball and the 16-oz. ball improved free throw shooting accuracy with the regulation weight ball, whereas practice with the 40-oz. basketball did not affect free throw shooting performance.

320. LEISTER, Alfred. The Effect of Using the Test Apparatus for Training on Isometric Strength Development. M.S. in Physical Education. 1965. 73 p. (C. A. Morehouse and E. A. Gross)

Male college subjects (78) were divided into 3 groups of 26 subjects each. For the isometric wrist adduction and elbow flexion strengths investigated, one group trained on the test apparatus, one group trained on the training apparatus, and one group did not train. The training apparatus required using the same muscles but a different body position than the test apparatus. The training consisted of two 12-sec. isometric

contractions performed 5 days a week for 7 weeks. Training on the test apparatus did not significantly increase isometric strength more than training on the training apparatus. However, both training groups made significant increases in wrist adduction and elbow flexion strength.

321. MOODY, Dorothy L. Imagery Differences Among Women of Varying Levels of Experience, Interests and Abilities in Motor Skills. Ph. D. in Physical Education. 1965. 89 p. (J. D. Lawther and B. H. Massey)

The mental imagery of 77 university women of varying experience, interest, and ability in motor skills was measured with 3 imagery tests developed specifically for this study. No significant differences in mental imagery were found among the university women with relatively high experience, interest, and ability in motor skills. The group of university women with relatively high experience, interest, and ability in motor skills were slightly superior to an inexperienced group in remembering details of motor demonstrations.

322. PERCIVAL, David W. The Economic Impact on Surrounding Townships and Boroughs of Shawnee State Park, Bedford County, Pennsylvania. M.S. in Recreation Education. 1965. 100 p. (F. M. Coombs)

The factors investigated were user visitations and expenditures, changes in employment, land and property values, and attitudes of local businessmen. An analysis showed that the Shawnee State Park had little economic impact on Bedford County or areas immediately surrounding the Park since the Park opened in 1951. The evidence did not indicate that Park attendance was increasing or that, as a result of the Park, local population, personal income, or real estate activity and new construction had increased. The attitudes of business owners were favorable, however, inasmuch as the majority of business owners felt the Park was having a positive economic impact on area business.

323. PHILLIPS, William B. A Case Study of Six College Freshman Men Possessing Low Levels of Motor Fitness. M. Ed. in Physical Education. 1965. 68 p. (G. A. Stull)

The subjects were 6 college students who had scored unusually low in a motor fitness test administered to all freshman men during September, 1962 at the Pennsylvania State University. There was considerable individual variation in the subjects' backgrounds, but several factors seemed common to all subjects. No subject had achieved a B average after three terms in college; each subject expressed dissatisfaction with his physical condition; each subject reported that his parents did not participate with him in play activities; the subjects' participation in competitive athletics was very limited in junior and senior high school; and the subjects had very little relationship with the opposite sex during their freshman year in college.

324. REICH, Charles M. Socioeconomic Factors Related to Household Participation in Community Recreation. Ph. D. in Recreation Education. 1965. 113 p. (F. M. Coombs and B. H. Massey)

Subjects were 150 household inhabitants in each of two similar selected communities who were interviewed with respect to their participation in and attitudes toward the available community recreation services. The study investigated the number of activities (breadth) and the number of days (intensity) of household participation and the interrelationship with certain socioeconomic factors. Results showed that the household unit was a useful measure of participation in recreation activities; social and economic conditions have greater influence upon the number of different activities than upon the number of days of participation; a large majority



of the households in both communities was in favor of using local tax money and of charging user fees, and with the exception of daily travel to children's playgrounds, neither travel distances nor the charging of user fees appreciably limited participation.

325. SWARTZENDRUBER, Lowell T. A Comparison of Physical and Mental-Physical Practice on the Performance of Basketball Shooting. M. Ed. in Physical Education. 1965. 55 p. (E. A. Gross and R. J. Scennell)

A correlated t ratio indicated that physical practice and a combination of mental and physical practice resulted in significant improvement in a basketball shooting test for 45 male college students at Pennsylvania State University. An analysis of variance indicated that there was a significant difference among the means of the two experimental groups and the control group at the end of the training period. When a comparison between experimental groups was made, no significant difference was found between the two methods of training.

326. WILLSON, Kent R. The Relative Effects of Various Foot Spacings on Performance in the Vertical Jump. M. Ed. in Physical Education. 1965. 65 p. (G. A. Stull)

Subjects were 160 junior high boys (ages 13-15) who were tested in the vertical jump at 16 different foot spacings which were all possible combinations of 5-in. intervals (both laterally and anterior-posteriorly). Vertical jump scores tended to decrease progressively as the anterior-posterior foot spacing increased. Vertical jumping performance was adversely affected when lateral spacing exceeded 10 in. For best performance, there should be little or no anterior-posterior spacing, and the lateral spacing may vary up to 10 in.

Sacramento State College, Sacramento, California

(D. R. Mohr)

327. GRITTS, Isaac C. A History of the Lodi Department of Recreation and Parks, 1941-1962. M. A. in Physical Education. 1964. 110 p. (M. A. Rousey)

Public records were examined and synthesized, and former and present personnel in the department were interviewed. The general program was rated excellent, and the athletics and sports program were rated outstanding in comparison with comparable communities by the California State Division of Recreation in 1956. The recreation program was popular in 1950 and also 1960 although the percentage of attendance was lower in 1960. The Lodi Lake Park was well attended in 1962 by residents of Lodi and the county. Many gaps in the continuity indicated a need for better record keeping.

328. HANSON, Louise M. A Study of Problems Involved in Baccalaureate Education for Selected Graduates of Six California Associate Degree Programs in Nursing. M. A. in Health. 1965. 85 p. (S. F. Radelfinger)

Department chairmen supplied names and addresses of 81 graduates who had continued their education. Questionnaires were sent to the group: 50 were returned, and 40 were usable. The returns indicated that obtaining admission to senior educational institutions was easier than remaining in baccalaureate major curricula. Much disparity existed between junior college course content and credit and that in institutions granting baccalaureate degrees. Candidates needed more adequate counseling about the 3 types of nursing programs, and associate degree nursing students needed additional counseling about baccalaureate nursing curricula. More financial assistance was also needed. The trend toward



baccalaureate education as minimal preparation for professional nursing seemed an attempt to upgrade nursing.

329. O'BRIEN, Susan E. A Study to Determine the Extent to which Selected Groups of College Students and Instructors Use Chapter-End Materials in Health Texts. M.A. in Health. 1965. 61 p. (A. L. Spillane)

Separate questionnaires were used for 238 students in the college health education courses and 63 college instructors of health education courses in California. The majority of students did not find the chapter-end material either useful or valuable but thought they should be retained in the texts. More graduate than undergraduate students found them useful and valuable. Most instructors did not consider chapter-end materials valuable and useful as effective teaching or learning devices and preferred to provide their own supplementary material but would include such material if they were writing a text.

330. PALMER, Raymond K. A Cost Analysis of Physical Education and a Comparison of the Per Pupil Cost of Physical Education and English in the Grant Joint Union High School District for the School Year 1963-64. M.A. in Physical Education. 1964. 50 p. (F. B. Jones)

Data concerning the physical education plant, facilities, and inventory were obtained from the district administrative office, Sacramento County Finance Report (1962-63), local Spalding Sporting Goods company, and unpublished theses. The construction cost of physical education facilities rose steadily since the first gymnasium was built in 1934. The cost per pupil enrolled in physical education was less than that in English and the cost of instruction in both was below the average per period cost in the district, so other subjects apparently had instructional costs that were above the district average.

331. SWIMLEY, Phillip S. A Cinematographic Analysis of Two Selected Baseball Swings. M.A. in Physical Education. 1964. 89 p. (F. B. Jones)

Analysis of slow-motion films was supplemented with a review of the related literature and interviews with experts. Extending the front leg and lower arm at the instant of impact seemed to increase hitting with power. Proper coordination apparently summated the available power sources to produce a maximum effort. A lack of coordination and timing of the wrist snap led to a loss in power.

San Diego State College, San Diego, California

(W. D. Ross)

332. ARMSTRONG, Charles Richard. Forearm Flexion Strength and Ergometric Performance Following Isometric Training at Selected Angles. M.A. in Physical Education. 1965. 75 p. (W. D. Ross)

High school boys (120) were assigned systematically to 5 groups on the basis of elbow flexion strength measured at 115° with a cable tensiometer. Three groups trained with one 6-sec. maximum contraction 5 days/week for 4 weeks at 90°, 115°, or 140°; one group trained at all 3 angles in sequence, and the fourth group did not train. An ergometer was made from bicycle parts and barbell weights. Preliminary study with 30 other subjects yielded a reliability coefficient of .91 for the strength test and .89 for the ergometer test. The groups that trained at 90° and 115° increased significantly in strength on the test at 115°. The groups that trained solely at one angle improved their ergometer performance but the other two groups did not.

333. DE BATE, Wayne Charles. The Effect of Personal Foul and the Free Throw on the Outcome of High School Basketball Games. M. A. in Physical Education. 1965. 113 p. (G. Ziegenfuss)  
Games statistics from 259 basketball games by 12 San Diego City Schools were analyzed. Teams that attempted more free throws, made more free throws, committed fewer fouls per game, and reached the bonus free throw situation tended to win. Making a higher percentage of free throws had little relation to the outcome of games.
334. ENOS, Donald Ferrin. A Survey of the Preparation and Use of Films in Coaching Basketball in Selected Colleges and Universities in the United States. M. A. in Physical Education. 1965. 136 p. (G. Ziegenfuss)  
A questionnaire on the equipment, extent, cost, utilization, and value of filming games was developed by interviewing 10 coaches at California institutions. The questionnaire was sent to 120 institutions selected randomly from the 1965 College Blue Book for Athletics. Eighty responded and 65 used films in their program.
335. GILLESPIE, William John. An Experiment to Determine Incomplete Shots for Basketball Shooting. M. A. in Physical Education. 1965. 61 p. (G. Ziegenfuss)  
Only "incomplete" shots, those that touched the rim but did not pass through, were analyzed. A rim equipped with electrodes on the near right, near left, far right, and far left quadrants was used with a recorder. Thirty basketball players between the ages of 14 and 18 from a single high school had 100 trials each with lay up, free throw, and jump shots. More lay ups were missed at the near left than any other quadrant. Twenty-seven subjects attempted the lay ups with their nondominant hand. The greatest number of "incomplete" free throw and jump shots were in the near right quadrant, and more misses to the right than the left indicated a tendency to miss on the side of the dominant hand. The data for all shots indicated that more were missed short than long. Comparing free throw and jump shots of the top and bottom 10 shooters showed that the less successful shooters tended to shoot short.
336. JOHNSON, Lenox Iredell. A Survey of Junior High School Interscholastic Athletics in San Diego County. M. A. in Physical Education. 1965. 59 p. (W. H. Schutte)  
Questionnaires were sent to professional personnel in 41 schools and to 410 parents selected by the 41 PTA presidents. School personnel returned 36 questionnaires and 147 parents responded. Twenty-nine schools had after-school athletic programs and 7 did not. Recommendations were prepared on the basis of professional and lay opinion.
337. PETERSON, Beverly A. A Comparison of the Social Efficiency of Selected Groups of Tenth- and Twelfth-Grade Girls. M. A. in Physical Education. 1965. 146 p. (W. H. Lauritsen)  
Items were selected from scales by McCloy, O'Neel, and Blanchard to construct a social efficiency rating scale. Grade 10 and grade 12 girls (200) were selected randomly, 20 from each of 5 physical education classes at each grade level from a high school representing a wide range of economic and social strata and a mixture of races with a lesser portion Negro. The grade 12 girls showed a more favorable response than the grade 10 girls on character, personality, and social efficiency trait items.
338. POOLE, James Richard. Baseball Batting Related to a Visual Factor. M. A. in Physical Education. 1965. (L. Olsen)  
The accommodative convergence/accommodation (ACA) ratio was

determined for 49 baseball players in San Diego high schools by qualified optometrists using standard clinical methods. No significant correlation was found between ACA ratios and the following season statistics: batting average, strike outs, total bases, and runs batted in.

339. SCHAD, Julia E. Effectiveness of Follow-through Procedures in Vision and Hearing in Elementary Schools. M.A. in Physical Education. 1965. 62 p. (L. A. Harper)

Health records were analyzed in 2 elementary schools with 1323 predominantly-Negro pupils. Screening procedures for vision and hearing were used regularly in both schools. The effectiveness of various methods of reporting to and contacting parents was judged on the basis of actually obtaining treatment for children identified in the screening process, with the following factors considered: number of contacts necessary, economic status of family, community resources, types of plans made with parents, school level, severity of the problem, and symptoms. Recommendations were made on the basis of the findings.

340. WALKER, Alfred Stanley. A Comparative Study of the Physical Fitness of Special, Average, and Gifted Twelfth-Grade Boys. M.A. in Physical Education. 1965. 76 p. (J. E. Lindsay Carter)

The physical fitness of special, average, and gifted grade 12 boys (65 each) was measured by a modified California Physical Performance Test. Comparisons were made between the groups on the 5 test items and the groups were compared with the grade 12 norms. The gifted group was superior to the special group in pull-ups and the 600-yd. run-walk. The average group was superior to the special group in the 600-yd. run-walk. The gifted and average groups compared favorably with the population means on all tests, but the special group was below the norm on all tests.

San Jose State College, San Jose, California

(W. F. Gustafson)

341. ANTONI, Gene. A Comparative Study of the Effects of a Combination of Isometric and Isotonic (Exer-Genie) Training with Isotonic Exercises (Weight Training) on the Shot Put and Static Strength. M.A. in Physical Education. 1965. 36 p. (J. S. Bosco)

High school fieldmen (19) were divided into two equated groups on the basis of a standing shot put test and a cable tensiometer test of elbow extension strength. Retests after their 6-week training programs showed that both groups improved significantly at the .01 level, but the difference in improvement was not significant.

342. LIONVALE, Thomas Jay. The Influence of Two Track Surfaces on Run Times and Velocity Curve Characteristics in the 100-Yard Sprint. M.A. in Physical Education. 1965. 40 p. (J. S. Bosco)

343. TERJUNG, Ronald L. The Effects of Progressive Dehydration on Maximal Isometric Strength. M.A. in Physical Education. 1965. 79 p. (J. S. Bosco)

Nine athletically-experienced and physically active male college students between 20 and 29 years of age had nutritionally adequate diets for 3 weeks with water intake limited to 1500 ml/day the first week, unlimited the second, and limited to 900 ml/day the third week. Mean weight losses of 2.2, 1.5, and 3.1 percent resulted. Maximal isometric strength of knee extension, total strength (sum of both grips, leg, and trunk extension), and total strength/body weight showed no significant change but elbow flexion strength decreased significantly 12.8 lb. or 10.7 percent during the first dehydration period. All of the isometric strengths except knee extension tended to parallel the mean weight loss during the second dehydration period.

344. USELDINGER, Ronald Eugene. A Chronology and Analysis of the Causes and Effects of Wrestling Rules Changes from 1957 to 1964. M.A. in Physical Education. 1965. 297 p. (W. F. Gustafson)  
Questionnaires concerning the causes and effects of rules changes were sent to all rules committee members. These served as a basis for a chronological analysis of the rules changes and some recommendations. Sources used were the NCAA Wrestling Guide, Amateur Wrestling News, and a previous thesis.

Smith College, Northampton, Massachusetts

(E. E. Way)

345. COUPER, Margaret E. An Analysis of the Transfer of Horizontal Momentum to a Vertical Jump. M.S. in Physical Education. 1965. 84 p. (E. E. Way)

Skilled and non-skilled performers were compared in this cinematographic analysis of the running jump for height. Skilled performers differed from the nonskilled in the following ways: greater arm hyperextension in approach, later initiation of arm swing in approach, more erect trunk at the low point of the crouch, more vertical projecting leg, greater angle of projection, greater vertical velocity of projection, and greater backward inclination of the trunk at the high point.

346. DYE, Evelyn A. A Program Survey of the Western Massachusetts Girl Scouts. M.S. in Physical Education. 1965. 119 p. (E. E. Way)

The study investigated the conduct of the troop program and evaluated it in terms of the procedures recommended by the National Girl Scout Council. Practice did not coincide with recommendations in making budgets, providing camping opportunities, providing first aid equipment, knowing safety procedures (particularly in regard to transportation accidents), and using troop consultants and professional personnel to assist in the program.

347. MAIL, Patricia D. The Influence of Binocular Depth Perception in the Learning of a Motor Skill. M.S. in Physical Education. 1965. 65 p. (E. E. Way)

The subjects were 41 college women who had had no experience in tennis. The Dyer Tennis Test was given as a measure of learning in tennis. The binocular depth perception tests were the Keystone View Ophthalmic Telebinocular, the Titmus Stereo Circles Test, the Modified Howard-Dolman Test, and the American Automobile Association Distance Judgment Test. Tests of binocular depth perception did not measure the same aspects of visual perception. Tests of simulated depth perception measured more of the same aspects of perception than tests of real depth perception, but there were definite differences among all the tests. Some aspects of binocular depth perception were positively related to proficiency in the learning of tennis.

348. WYNNE, Kathleen M. The Life and Contributions of José Limón. M.S. in Physical Education. 1965. 104 p. (E. E. Way)

South Dakota State University, Brookings, South Dakota

(G. E. Robinson)

349. BOETEL, Norma M. The Effects of Physical Practice, Mental Practice, and Mental-Physical Practice on the Learning of Selected Basic Tumbling Stunts. M.S. in Physical Education. 1965. 46 p. (G. Crabbs)

350. EIDSSNESS, Clifford L. The Effect of Physical, Mental-Physical, and Mental Practice on the Learning of a Motor Skill. M.S. in Physical Education. 1965. 42 p. (G. E. Robinson)
351. FRITZ, William E. Effects of a Trampoline Training Program on Selected Items of Motor Fitness. M.S. in Physical Education. 1965. 50 p. (M. T. Woodall)
352. KORTAN, Donald L. A Comparison of Interval Running and All-Out Running as Methods of Increasing Circulorespiratory Endurance. M.S. in Physical Education. 1965. 36 p. (G. E. Robinson)
353. MANSHEIM, Harold R. A Study of the Present Status of Physical Education Facilities for Women in the Institutions of the South Dakota College Physical Education Association. M.S. in Physical Education. 1965. 98 p. (G. Crabbs)
354. RICHTER, Stanley E. The Effect of Positive and Negative Motivation Upon Selected Measures of Circulorespiratory Adjustment and All-Out Running Performance. M.S. in Physical Education. 1965. 38 p. (M. T. Woodall)
355. SCHLEKEW, Y. Lavern L. The Effect of Weight Training on Explosive Power and Leg Strength During a Basketball Season. M.S. in Physical Education. 1965. 28 p. (A. C. Bundgaard)
356. TALICH, William C. The Effects of a Cold Sitz Bath on Various Measures of Circulorespiratory Recovery from Vigorous Exercise. M.S. in Physical Education. 1965. 47 p. (M. T. Woodall)
357. TSCHETTER, Douglas L. The Effects of Selected Football Drills on Agility. M.S. in Physical Education. 1965. 25 p. (E. Huether)

**University of Southern California, Los Angeles, California**

(H. A. deVries)

358. ADAMS, Adran D. The Effect of Exercise Upon Ligament Strength. Ph. D. in Physical Education. 1965. 62 p. (E. Metheny)  
Female rats two months old served as subjects. One group was confined in 8" x 5" x 8" individual cubicles. The control group roamed freely in 24" x 40" x 12" cages. The third group exercised 15 min./day, 5 days/week for 5 weeks in a rotating drum with a smooth surface, and the fourth group exercised for an equal duration in a rotating drum with an uneven surface. Both exercise groups were housed in cages similar to the control group's. Ligament strength was directly related to the necessary involvement of the knee in the four programs. The mean ligament strengths for the groups that were exercised systematically in the revolving drum were significantly higher than the means for the free exercise and restricted groups. The mean for the group exercised on an uneven surface was significantly higher than that for the group exercised on a smooth surface. The stronger ligaments were progressively more opaque and slimy and less tightly stretched between their attachments.
359. BARTEE, Barbara A. The Effect of Applications of the Principle of Overload on the Development of Skill. Ph. D. in Physical Education. 1965. 185 p. (A. Lockhart)  
Both parts of the study involved 28 practice sessions of 35 min. duration

with the Miller Test being administered 4 times in each part. The first part involved 84 college women in 4 experimental groups and 1 control group. The experimental groups performed different combinations of 3 of 4 special overload practice activities designed to improve badminton performance for 12 min. daily during 10 days in addition to the traditional badminton practice. The second part involved 42 college women. The experimental group practiced the 3 overload activities found most beneficial in the prior investigation in addition to the traditional practice, and the control had only traditional practice as before. The results indicated that specially-designed overload exercises produced steady improvement in skill.

360. BELL, Virginia Lee. Augmented Knowledge of Results Related to Constant and Variable Errors and Its Effect Upon Acquisition and Retention of a Gross Motor Skill. Ph. D. in Physical Education. 1966. 127 p. (A. Lockhart)

College students (78) were assigned to 4 groups that practiced the long serve in badminton 20 times daily for 8 days. The experimental groups practiced with a rope placed at the high point as a visual aid, and the control group practiced without the rope and without additional knowledge of results. One experimental group was instructed to reduce their variable error by correcting errors apparent on the preceding trial. Two experimental groups concentrated on reducing constant errors or reducing the most common error in the preceding 20 trials either in terms of direction only or in terms of both distance and direction. Males performed significantly better than females but differences between practice groups on the last day of practice, on a posttest without knowledge or results, and on a retention test after 5 weeks of no practice were not significant. Knowledge of results inherent in the task seemed sufficient at the beginning level and as effective as an additional visual aid and in concentration on specific aspects of performance.

361. BENFORD, Margaret Laretta. Case Studies of Five Maladjusted Girls in a Modern Dance Class. M.S. in Physical Education. 1965. 102 p. (H. A. deVries)

362. BOUTIN, Kenneth James. Experimental Analysis of the Zone and Man-to-Man Defense in College Basketball. M.S. in Physical Education. 1965. 66 p. (H. A. deVries)

363. BOYCE, Roberta Ann. The Relationship of Physical Fitness Test Performance, Skill Test Performance, and Intelligence among High School Girls. M.S. in Physical Education. 1965. 67 p. (H. A. deVries)

364. DAY, Naomi Annette. The Effect of a Selected Isometric Exercise on Arm-Flex Hang Scores of Junior High School Girls. M.S. in Physical Education. 1965. 45 p. (H. A. deVries)

365. HAWKES, Arthur E. A Set of Operational Principles for County-Level Supervision of Physical Education in California. Ph. D. in Physical Education. 1965. 307 p. (E. Metheny)

Statements concerning 58 operational principles of supervision were derived from the literature and evaluated by county supervisors of physical education in California to determine possible areas of agreement and disagreement concerning what they do and how they do it. The returns indicated substantial agreement in general with the intent of the principles as presented, so they seemed appropriate to the specific responsibilities and functions of the supervisory group.

366. KIINO, Ronald Isao. Proposals for Specific Movement Experiences for the Spastic Cerebral Palsied. M.S. in Physical Education. 1965. 99 p. (H. A. deVries)
367. KORHONEN, Juho. An Analysis of the Game of Tennis for Beginners. M.S. in Physical Education. 1965. 54 p. (H. A. deVries)
368. MARTIN, Leatha Joyce. An Investigation of the Relationship Between Motor Educability and Intelligence in a Selected Group of Junior High School Girls. M.S. in Physical Education. 1965. 30 p. (H. A. deVries)
369. McCOLLUM, Rubin Dale. A Study of the Recreation and Physical Education Program in a Youth Authority Training School. M.S. in Physical Education. 1965. 53 p. (H. A. deVries)
370. MENKE, Sara Rebecca. The Young Dancer. M.S. in Physical Education. 1965. 35 p. (H. A. deVries)
371. RUST, Carolyn. An Experimental Study of the Obstacle Course to Determine Physical Performance Improvement of High School Girls. M.S. in Physical Education. 1965. 86 p. (H. A. deVries)
372. SALTZ, Lynne Erin. Concerty for Man. M.S. in Physical Education. 1965. 23 p. (H. A. deVries)
373. SHERMAN, Atara P. Theoretical Foundations of Physical Education in the United States: 1886-1930. Ph.D. in Physical Education. 1965. 183 p. (E. Metheny)

Review of the professional literature indicated that the subject matter of physical education was drawn largely from European systems, consisted of exercises designed to develop a strong physique to support utilizing mental powers, and rested on a philosophical assumption of mind-body dualism, from 1886 to 1900. A transition from the "physical training" of the German and Swedish systems to the more distinctively American "physical education" was evident from 1900 to 1915. The subsequent pattern from 1916 to 1930 rested on the assumption of mind-body unity and focused attention on the educational and physical development of the child as a whole by using games, sports, dances, and exercises to develop skilled bodily movement within the context of the overall learning process.

374. SHVARTZ, Esar. The Effect of Two Different Training Programs on Cardiovascular Adjustments to Gravity. Ph.D. in Physical Education. 1965. 142 p. (E. Metheny)

Male college students (33) were assigned randomly to a control group, a group that trained the lower extremities with bench-stepping or a group doing equal mechanical and physiological work in the upper extremities with pull-ups and dips. Changes in heart rate, systolic blood pressure, diastolic blood pressure, and pulse pressure attending a change from the horizontal to quiet standing, to a slow vertical tilt, to a rapid vertical tilt, to a rapid vertical tilt while exerting tension, and to a rapid vertical tilt after 30 sec. of mild exercise were measured after the training programs. The trained subjects exhibited larger pulse pressure and slower heart rate than the controls when changing to the vertical position, and the group training the upper extremities maintained a larger pulse pressure than the group training the lower extremities after being tilted to the vertical. Strength gains and cardiovascular changes were not correlated. Systematic endurance exercise improved cardiovascular adjustment to gravity, and exercising the upper body was more beneficial than exercising the lower body.



375. TOLMAN, Otha Ernest. A Comparative Evaluation of Isometric and Isotonic Strength Building Programs. M.S. in Physical Education. 1965. 57 p. (H. A. deVries)

376. VAN VLIET, George. A Proposed Weight Training Program for High School Wrestlers. M.S. in Physical Education. 1965. 87 p. (H. A. deVries)

377. WINNINGHAM, Sam N. Effect of Training with Ankle Weights on Running Skill. Ph.D. in Physical Education. 1965. 92 p. (E. Metheny)

Male college students (120) were divided randomly into 4 equal groups and were measured initially and finally in a cued running maze requiring a series of quick directional changes based on perception of cues. Uncued maze running speed and 100-yd. dash time were also measured. Three groups trained in the cued maze for 6 weeks wearing 5-lb., 2-lb., or no ankle weights. These groups decreased their running times significantly but differences among the groups were not significant, either initially or after practice. Apparently differences in ankle weights had no effect on running the uncued maze. The group trained with 5-lb. ankle weights ran significantly slower in the final 100-yd. run, probably as a result of training with added weight. Training with ankle weights did not apparently aid the development of the type of running skill commonly associated with vigorous team sports.

378. WRIGHT, Rollin G. An Analysis of the Techniques of Guiding Student Teaching Experiences. Ed.D. in Physical Education. 1965. 100 p. (E. Metheny)

Crucial behavioral actions of training teachers directing student teachers were identified from 554 usable critical incidents which were collected from student teachers, training teachers, and college supervisors representing 5 California state colleges. The 901 behaviors derived from the incidents were separated into 31 categories of effective and ineffective behavior. The critical behaviors which differentiated most frequently between effective and ineffective direction of student teachers concerned the amount of freedom granted the student teacher in various aspects of teaching, the manner in which the training teacher observed and evaluated the student teacher, and the guidance that the student teacher received from the training teacher. A checklist was developed which provided a semi-objective evaluation of the direction of student teachers.

Springfield College, Springfield, Massachusetts

(E. W. Seymour)

379. AULT, John K. A Compilation of Volleyball Skills. M.S. in Physical Education. 1965. 87 p. (C. Shay)

A series of volleyball skills was compiled from coaches of colleges and YMCA teams listed in the 1959 and 1960 Volleyball Guides, directors of physical education listed in the 1959 YMCA Year Book, Official Roster and the YMCA Journal of Physical Education. Each coach and physical director was asked to explain and diagram at least two drills for the following skills: spiking, serving, setting, blocking, passing, ball handling, digging, and receiving the serve. The various skills used in the study were evaluated by the writer and a former Springfield College volleyball coach. No attempt was made to evaluate the drills.

380. BELANGER, Yves. Role of the Catholic School Board in the Community Recreation Program in Quebec City, Canada. M.S. in Physical Education. 1965. 69 p. (D. Bridgeman)

A plan was developed for a community recreation program using the

physical education facilities of the Catholic School Board of Quebec City. The procedure attempted: to describe the present community recreation program in Quebec City, the various agencies organizing it and the facilities available, the current developments in community recreation, and the characteristics of a good community recreation program, to discuss the role of a school board in promoting community recreation and the need for maximum utilization of community resources and facilities for the benefit of the community, and to suggest a community recreation program for Quebec City.

381. BISSONNETTE, Remi. The Relative Effects of Mental Practice and Physical Practice in Improving Speed of Forward Skating. M.S. in Physical Education. 1965. 46 p. (E. Seymour)

The 30 ten-year-old subjects of varying skating ability were a sample of the male population of the Courville School in Quebec City and were chosen by means of random numbers. The subjects were tested for speed, and 3 equated groups were formed with each receiving one of the following treatments: the physical practice group was asked not to skate more than 3 hours during the course of the study, the mental practice group had 10 mental practice sessions of 10 min. each, and the physical practice group with instruction had 5 sessions of 20 min. of instruction and physical practice and did not skate outside of these periods. The subjects were tested the 1st, 6th, and 12th days of the experiment. Statistical analysis indicated that improvement in speed of forward skating was significant at the .01 level with all treatments. The difference in improvement between any two methods was not significant.

382. BLAESS, Nancy N. The Development of an Archery Knowledge Test. M.S. in Physical Education. 1965. 70 p. (C. Shay)

Springfield College students in archery classes, former archery students, and a group of instructors and experts were administered 121 multiple choice questions. The test was reduced to 77 valid items by item analysis using the Flanagan Index of Discrimination, and the reliability was determined by using the Kuder-Richardson formula. Objectivity was determined by the subjective evaluation of a jury of experts. Constructing national norms was recommended.

383. BRACKEN, Dolores. The Values of College Coeducational Badminton. M.S. in Physical Education. 1964. 74 p. (A. Jewett)

Eighty students without previous badminton instruction were randomly assigned to 2 coeducational, one all-male, and one all-female classes for a 7-week unit in badminton. Students were tested during the first 3 and the 13th and 14th classes in attitude toward physical education, knowledge, skill development, and acquaintance made. Attitude showed no significant change but knowledge showed a significant increase beyond the .01 level. Skill gained significantly the .01 level for women in separate and coeducational classes and for men in separate classes. Acquaintances made increased significantly in all groups.

384. BREDICE, Frederick A. Effect of Skill Performance on Games Outcome in Basketball. M.S. in Physical Education. 1965. 41 p. (E. Steitz)

Field goals attempted and made, fouls, shots attempted and made, rebounds, passes, personal fouls, and total score for the 1965 Springfield College freshman basketball team and their opponents were intercorrelated and subjected to a Wherry-Doolittle multiple correlation. Skill in shooting was the most important factor and passing was second. A short team can compensate for this in other aspects of the game.

385. CHADYS, Joel L. A Manual of Teaching Aids for Baseball. M.S.

in Physical Education. 1965. 69 p. (W. Doss)

Through review of the literature covering the last 25 years and contact with 33 college varsity baseball coaches, a compilation was made of teaching aids considered valuable in teaching batting and pitching fundamentals. All of the aids could be constructed by a coach. Illustrations, lists of materials, and dimensions for constructing the aids were included.

386. CONRAD, Frederick A. A Comparison of the Effect of Skill Practice Sessions on Vertical Jumping Ability. M.S. in Physical Education. 1965. 38 p. (C. Shay)

Varsity and junior varsity players (23) from a high school basketball team were divided into a weight group of 11 who performed dead lift, knee bend, and heel raise exercises and an exercise group of 12 who spent an equal amount of time practicing the vertical jump 3 times a week for 6 weeks prior to the basketball season. The Sargent Jump was used to measure vertical jumping ability before and after the training program. Each group mean increased 2 inches or slightly more, but an F of .56 from analysis of covariance indicated no difference between the effects of the treatment.

387. COSTELLO, Richard A. The Relationship of Attitudes Held by Senior Boys and Rated Physical Education Programs in Selected High Schools in Maine. D.P.E. 1965. 115 p. (E. Seymour)

Fifty high schools selected from those having physical education programs were evaluated with the LaPorte Score Card No. 11, and the Wear Physical Education Attitude Inventory was administered to 1806 senior boys in these schools. Mean LaPorte Scores for large, medium, and small school enrollments and town sizes were progressively and significantly greater for the larger units. Accredited high schools were significantly better than nonaccredited. But no significant relationship existed between the Wear Attitude Inventory results and those for the LaPorte Score Card.

388. DUROCHER, Raymond. A Proposed Intramural Program Guide for Boys, Grades 8-11, in the French Speaking Secondary Schools of the Province of Quebec. M.S. in Physical Education. 1964. 147 p. (J. Parks)

A questionnaire survey of 50 physical educators in the Province indicated consensus that a trained physical educator should supervise the program and train officials. An intramural council should establish criteria for competitive units, provide a varied activity program, develop written regulations concerning eligibility, and organize suitable tournaments. The program should use existing facilities maximally and should be financed by the school board.

389. ELIAS, John. The Effect of Overload Training on Speed in Baseball Pitching. M.S. in Physical Education. 1964. 47 p. (E. Seymour)

The freshman pitchers (12) from the Michigan State University baseball team were divided randomly into an experimental group that trained with 7-, 9-, and 11-oz. balls plus a conditioning program for 6 weeks. A control group trained on equal time with 5-oz. balls. Ball speed was timed before and after training with an Automatic Performance Analyzer which could be read directly to .01 sec. or to .001 sec. by interpolation. Analysis of variance showed no significant difference between groups on either test; analysis of covariance showed no significant difference in improvement. Within subject improvement was beyond the .01 level for 11 subjects and beyond the .05 level for the twelfth. Within group improvement was at the .05 level for the control group and at the .01 level for

the experimental group. All subjects maintained a more consistently higher velocity on the final test.

390. FAMELLETTE, Joseph M. A Comparison of Individual and Partner Testing in the Required Health Course at Rockland Community College. M.S. in Physical Education. 1965. 51 p. (C. Shay)

Six sections of a required health course (67 women and 115 men) were tested initially and finally with the Kilander Health Knowledge Test, Form A<sub>m</sub>. Intervening tests in 2 sections each involved individual, partner, and combination testing. Partner testing consisted of having two students collaborate in selecting the right answer or record their answer separately if they disagreed. Combination sections used both methods. Analysis of covariance showed no significant mean differences between groups in improvement, but students expressed a strong preference for partner testing.

391. GILLIS, Robert J. Effect of Ingested Water Volume and Temperature on the Body Weight Loss, Cardiac Cost, and Body Heat Storage of Football Players. D.P.E. 1965. 89 p. (C. Shay)

Varsity football squad members (27) at Adrian College served as subjects. They were tested wearing football uniforms and doing strenuous work in a hot, humid environment to determine the separate and combined effects of ingesting water in varying amounts at varied temperature on cardiac cost, body heat storage, and body weight loss. Statistical analysis showed that ingesting up to 12 oz. of ice water every 15 min. had no adverse effect and that ingesting water between 32 and 92 F had little, if any, effect on perspiration flow. Replacing lost body fluids every 15 min. decreased physiological cost and increased work output.

392. GRECO, Joseph J. A Survey and Analysis of Exercise Therapy Used During the Post-Traumatic Stage of Athletic Injuries. M.S. in Physical Education. 1965. 102 p. (S. Shaw)

The survey covered current exercise therapy practices for shoulder, knee, and ankle-foot injuries involving a bruise or contusion, sprain, strain, dislocation, fracture, and swelling or inflammation. Questionnaire returns from 46 colleges and universities showed great variation and lack of agreement concerning the preference in therapy for the same diagnosis.

393. HESS, Robert C. The Effects of a Weight Training Program on the Soccer Kick for Distance. M.S. in Physical Education. 1965. 44 p. (I. Schmid)

Springfield College varsity soccer team members (17) were divided randomly into a control group and an experimental group that used progressive resistance exercises to develop hip flexion and knee extension strength for 7 weeks. All subjects were proficient in kicking a stationary ball with the instep. All subjects had pre- and posttests for kicking distance (average of the 5 longest of 20 kicks) and leg strength (sum of hip flexion and knee extension strength). Analysis of covariance showed that the experimental group improved significantly more in kicking distance at the .01 level. The t ratio showed a significant increase in leg strength at the .01 level for the experimental group but not for the control group.

394. HILL, Roger L. A Comparative Study of the Croquet and the Conventional Method of Putting. M.S. in Physical Education. 1965. 26 p. (C. Shay)

Physical education students (34) with previous experience in golf were divided into 2 groups who were instructed separately in using either the conventional or the croquet-style putter. After equal instruction the

groups were tested in putting from 4, 20, and 30 ft. The criteria for "success" were holing 3 successive putts from 4 ft. and getting 3 successive putts within 4 ft. of the cup from 20 and 30 ft. Trials to reach the criteria from each distance were counted. The group using the croquet style putter used fewer trials from 4 and 30 ft. Those using the conventional putter used fewer trials from 20 ft. Neither method was significantly superior when evaluated by the *t* ratio.

395. KLISSOURAS, Vassilis. Electrogoniometric Study of the Jumping Events. M.S. in Physical Education. 1965. 114 p. (P. Karpovich)

Goniograms were recorded from electrogoniometers attached to the big toe, ankle, knee, and hip joints of 6 male subjects. Records were taken during the approach and take-off phases of the running broad jump, high jump, and triple jump. The action of the joints before and during take-off, the duration of contact of the foot on the board, and the leg angle at the instant of take-off were of particular interest.

396. KRASKA, Sally A. A Mechanical Analysis of the Basic Sand Trap Shot. M.S. in Physical Education. 1965. 40 p. (C. Shay)

Pictures were taken with 2 Keystone (K-20) 8 mm cameras calibrated at 16 frames/sec. of 3 professional golfers. All subjects used a sand wedge with either an overlapping or interlocking grip but with the heel of the left hand at, but not over, the end of the shaft. The club face was open at address and throughout the swing and contacted the sand approximately 1 in. behind the ball. The stance was open with the right toe 12 in. and left toe 17 in. from the intended line of flight and with 17 in. between the toes. A golfer might improve his sand trap shots by observing these technical details.

397. LAMBERT, Thomas K. A Study to Compare Two Methods of Conditioning the Trunk Flexor Muscle Groups Used in the Javelin Throw. M.S. in Physical Education. 1964. 36 p. (S. Shaw)

Inexperienced male students (30) between 18 and 28 years of age were assigned randomly to 3 groups to compare the effects of straight leg sit-ups with weights, free-hanging knee raise, and no special exercise program on developing trunk flexion speed. Isolated exercise of the trunk flexors was accomplished by strappings which restricted the range of motion of the shoulders to 25° and the elbow to 90°. Speed of trunk flexion was measured with the Hale Reaction-Performance Timer with the subject approximating the basic throwing position of the Finnish style of javelin throwing. The 2 exercise groups practiced 4 days/week for 3 weeks. No significant difference between the two exercise and control groups was found.

398. LAWRENCE, Lee W. Practices in Conditioning of Competitive Swimmers. M.S. in Physical Education. 1965. 107 p. (C. Silvia)

College swimming coaches (158) were surveyed by the questionnaire and interviewed concerning their out-of-water and in-water conditioning programs. More emphasis was placed on the arms than the legs in both programs and the primary emphasis in out-of-water programs was on strength development. The variety of responses indicated that conditioning was largely an individual matter adapted to a particular swimmer in relation to a specific event.

399. LORD, John C. Survey of Methods Used in Individualizing Physical Education for the Low Achiever in Quebec High Schools. M.S. in Physical Education. 1965. 89 p. (J. Parks)

Data were obtained from 57 English-speaking schools by a questionnaire. Little attention was given to individualizing teaching methodology for low

achievers and few schools had adapted physical education classes. Integrating low achievers into the regular program, but with additional special classes to strengthen their weak areas, was recommended.

400. LOWNDES, Robert W. A Study of Independent Mobility for the Blind Through the Use of the White Cane. M.S. in Physical Education. 1965. 99 p. (E. Seymour)

A history of the evolution of techniques for independent travel with a cane by the blind was developed. A step-by-step guide for instructors to develop the mobility of blind individuals was prepared on the basis of personal experience, interviews with instructors of the blind, and the professional literature dealing with cane travel.

401. McKEON, John A. A Study of the Works and Contributions of Ernst Hermann Arnold to the Profession of Health and Physical Education. D.P.E. 1965. 264 p. (C. Shay)

All available material concerning Arnold, his family background, his professional activity since 1888, and the evolution of Arnold College for Hygiene and Physical Education from its origin as the Brooklyn Normal School of Gymnastics were analyzed in relation to changes in American society, education, and physical education from the Civil War to 1930. Arnold was a dominant factor in establishing admission requirements and curriculum content for physical education through his leadership on national committees. He also had considerable influence on the Connecticut State Assembly which made physical education mandatory in the public schools of Connecticut.

402. MacPHEE, Leonard R. A Survey of Health Instruction in the Public High Schools of Maine. M.S. in Physical Education. 1965. 109 p. (H. Childs)

Questionnaires covering general information and course content were addressed to health instructors or to principals in schools without a health instructor and sent to all public high schools listed in the Maine Educational Directory. Material on file in the State Department of Education, Augusta, was also used. The data were analyzed and statements concerning health instruction were formulated in terms of schools having 125 and under, 126-300, 301-500, and 501 and above pupils.

403. MAETOZO, Matthew G. An Analysis of the Professional Preparation of Interscholastic Athletic Coaches in Selected Sports. D.P.E. 1965. 243 p. (R. Frost)

Questionnaires concerning professional preparation, experience, and competencies were sent to 1,410 coaches, 235 each in baseball, basketball, football, soccer, track, and wrestling. Viewpoints were solicited from 50 each high school principals, city directors, and state directors of physical education and athletics and the executive secretary of the National Federation of State High School Athletic Associations. Recommendations for the professional preparation of interscholastic athletic coaches were based on the results and should be useful in developing practical courses.

404. MARSH, David B. A Study of the Professional Preparation and Playing Experience of Selected High School Coaches. M.S. in Physical Education. 1964. 74 p. (E. Seymour)

A questionnaire was sent to each of 7 head coaches in 100 public high schools in 4 eastern states, and 220 were returned. The study attempted to determine whether participation in a particular activity was a necessary prerequisite for coaching that activity and what professional preparation courses in physical education were beneficial for the teacher-coach in secondary schools. Participation in the sport coached was considered

extremely important but not absolutely essential, and various courses in the professional physical education curriculum were considered extremely important.

405. MISTKAWI, John J. Norms for Eight-, Nine- and Ten-Year-Old Boys on the YMCA Athletic Achievement Test. M.S. in Physical Education. 1965. 102 p. (C. Shay)

National norms were prepared for the 1-minute basketball throw for goal, pull-ups, potato race, standing hop, step, and jump, push-ups, standing broad jump, and softball target throw items of the YMCA National Athletic Achievement Program. YMCA's (51) throughout the United States tested 2,000 boys in each age group, and the author obtained 5 percent of the scores at the Salem YMCA, Oregon.

406. NICOLAU, Anthero. A Comparison of an Experimental and a Traditional Program of Preseason Football Conditioning. D. P. E. 1965. 98 p. (E. Seymour)

The 9 basic fitness tests developed by Fleishman were administered to the 1964 varsity football squad at the University of Bridgeport before and after the preseason conditioning program as an index of football fitness. Half of the players used the traditional program consisting of a short jog, stretching exercises, push-ups, sit-ups, leg-raises, toe-touching, neck-bridging, grass drills, and running in a circle at top speed over players lying down. The other half used the circuit training principle with vertical jumps, push-ups, leg-lifts, squat thrusts, step-ups, bent arm hangs, grass drills, and dips at the 8 stations. The circuit training group improved significantly while the traditional group did not, but the difference in improvement was not significant.

407. ONYILIOGWU, Kanayochukwu. Physical Education Program for Boys' Secondary Schools in Eastern Nigeria. M.S. in Physical Education. 1965. 95 p. (J. Parks)

Data from Eastern Nigeria, climatic conditions, cultural patterns, personal experience, and philosophies and programs of other countries were used as background material. The proposed program included: recognition by the Ministry of physical education as a part of education, an annual allocation, encouraging young men to study physical education with employment guaranteed, employment of overseas teachers until the need could be met locally, program activities including intramural and interscholastic athletics, area inspectors for evaluation and advisement, and supplementary recreation centers.

408. PECK, Eugene H. Athletic Trainers and Training Room Facilities in the Secondary Schools of Rhode Island. M.S. in Physical Education. 1965. 77 p. (H. Childs)

An appropriate questionnaire was sent to all athletic directors in the Rhode Island secondary schools and many were interviewed. Visitation and responses from 35 of the 40 schools showed that athletic training rooms meeting the recommended requirements of the National Athletic Trainers Association, the AMA, and AAHPER were practically nonexistent.

409. PETERSON, Donald. Strength-Power Relationships During Forearm Flexion Against Different Loads. M.S. in Physical Education. 1965. 48 p. (W. Sinning)

410. PILSBURY, Peter F. Case Studies in the Use of Velcro in the Activities of Dressing and Undressing for Male Hemiplegic and Hemiparetic Patients. M.S. in Physical Education. 1965. 83 p. (H. Childs)



Six hemiplegic and hemiparetic patients were trained with daily half-hour sessions on each of the 4 dressing criteria from the Daily Living Test over a 4-month period. They were trained first with standard clothing and then with Velcro (tear tape) replacing the buttons, zippers, buckles, and laces. The results indicated that the patient can save time, become more independent, and save the hospital money with Velcro attachments on his clothing.

411. POON, Joe. A Cinematographical Analysis of the Arm Action in the Basketball Jump Shot. M.S. in Physical Education. 1965. 57 p. (E. Steltz)

One-hand jump shots by 6 varsity basketball players were filmed with a 16 mm camera at 24 frames/sec. The camera was fixed on a tripod in the best position for recording the arm movements, and the jump shots were taken behind the foul line and directly in front of the basket. Arm angles were measured at 6 critical positions in the complex arc of the shot as a basis for recommending arm movements for executing the shot properly.

412. RICH, Stephen. A Comparison of Two Methods of Throwing to Second Base from the Pitcher's Mound. M.S. in Physical Education. 1965. 40 p. (A. Allen)

413. ROBINSON, Robert J. A Study to Standardize the Performance of the Girl's Bench Push-up. M.S. in Physical Education. 1965. 64 p. (C. Shay)

Standing height, shoulder height, and arm length measurements were made on Springfield College women and girls at Dryden Central High School, New York. Standing height ranged from 58 to 68.5 in. The optimum foot position which standardized body position in terms of the 3 distances was at standing height minus 9.5 in. from the closer edge of a 15-in. bench.

414. SERVIS, Margery Ann. Qualities Related to Success in Women's Physical Education Professional Preparation Program. D.P.E. 1964. 144 p. (R. Frost)

Data were obtained from 69 Central Michigan University women physical education majors. Success criteria were academic index, faculty rating, peer rating, and a composite of these. Possible predictors were Rogers' PFI, Scott Motor Ability Test, 7 temperament trait scores from the Thurstone Temperament Schedule, and 6 value scores from the Allport-Vernon-Lindzey Study of Values. Value and interest variables showed virtually no relationship to success criteria. Multiple regression equations were developed for predicting each of the success criteria. The highest  $r$  was for the composite success score predicted from the PFI, the active temperament trait score, and the mental ability score.

415. RUBICAM, Clifton L. A Comparison of the Differences in Speed and Accuracy Between Two Methods of Spiral Pass to the Punter in Football. M.S. in Physical Education. 1965. 54 p. (J. Parks)

416. SINGH, Mohan. Isotonic and Isometric Forces of Forearm Extensors and Flexors. D.P.E. 1965. 112 p. (P. Karpovich)

An objective instrument was developed to measure maximum isotonic and isometric forces of the forearm extensors and flexors continuously throughout the range of movement. Maximum voluntary concentric, eccentric, and isometric forces were measured twice for 20 male physical education majors. For forearm extensors, the maximum concentric force was 6.9 percent greater than the maximum isometric force and 34.8 percent greater than the maximum concentric force; the respective

percentages for the forearm flexors were 14.6 and 41 percent.

417. SPARKS, Raymond E. Modification of the AAHPER Youth Physical Fitness Test. D. P. E. 1965. 150 p. (C. Shay)

418. SULLIVAN, Linda. Relationships Between Self- and Measured Perceptions of Physical and Personality Characteristics. M. S. in Physical Education. 1965. 90 p. (E. Seymour)

The Edwards Personal Preference Schedule was administered to 10 undergraduate women who then rated themselves on the 15 variables for a self-concept of personality. Anthropometric measurements were taken and then the subjects made a self-appraisal of body image by selecting the body outline most like hers and then indicating which parts were larger, smaller, or the same. The "Self-Appraisal of Body Image" material consisted of tracings from photographs of other students. Subjects were ranked on the accuracy of their self-appraisals of personality and body image. The two accuracy rankings correlated .14.

419. TIMMER, Karen L. A Tennis Skill Test to Determine Accuracy in Playing Ability. M. S. in Physical Education. 1965. 36 p. (C. Shay)

Scoring areas were marked off which corresponded to relative value in actual play. Balls were projected "down-the-alley" and across court with a Ball-Boy machine, and 30 each forehand and backhand returns were scored. Seven members of the men's freshman tennis team and 9 of the women's extramural team took the test and were ranked on the results of round robin tournaments. The rho of .86 for men and .75 for women indicated that the test could be used effectively in evaluating playing ability.

420. TYSON, Forrest C. The Influence of Knowledge on Soccer Goal Kicking Related to the Angle of Probability. M. S. in Physical Education. 1965. 68 p. (I. Schmid)

421. WALKER, Alan. The Relationship of Distance and Accuracy to Three Golf Grips. M. S. in Physical Education. 1964. 49 p. (C. Shay)

Male subjects (24) were ranked on their past performance in golf and assigned to 3 equal groups which were rotated to equate the effect of previous testing. They used the Vardon, interlocking, and baseball grips on 3 different days with 5 practice trials and 10 test trials. Each subject used a driver and balls that met PGA standards. Analysis showed that none of the grips was statistically superior to the others in terms of greater distance or accuracy.

422. WEINGARTNER, Jay E. A Comparison of a Sprint Start and a Standup Start in Broad Jumping. M. S. in Physical Education. 1965. 38 p. (J. Parks)

423. WELSCH, James E. The Effects of Selected Exercises on Football Endurance. M. S. in Physical Education. 1965. 35 p. (C. Shay)

Thirty Springfield College varsity football players and 15 non-football players served as subjects to determine whether a conditioning program of running, agility drills, and weight training would improve endurance. The football players were divided into two experimental groups and a control group with linemen, offensive backs, and ends and defensive secondary equally represented. One experimental group used all and the other used the first six of the following weight training exercises: three-quarter squats, heel raises, bench press, sit-ups, military press,

power lift, hip extension, and hamstring flexion. All groups were tested at the beginning and end of a 6-week program by running eight 30-yd. dashes at maximum speed to measure endurance. Neither experimental program affected football endurance significantly.

424. WILKINSON, Robert E. Effect of Motivational Conditions Upon the Performance of Boys of Different Age Levels. D. P. E. 1965. 164 p. (J. Genascl)

Eighty boys were randomly selected from each of 4 age levels (7-8, 10-11, 13-14, and 16-17 years). Subjects were tested for muscular endurance of the right arm with an ergograph, and the results were used to equate 3 treatment groups and a control group. The test was repeated 3 weeks later. The "praise" groups were given verbal encouragement and the "reproof" groups were subject to verbal disparagement during the latter part of the test. The "aspiration" groups set hoped-for goals after being told their initial scores. The control groups had the initial instructions repeated. Analysis of covariance showed that verbal encouragement, verbal discouragement, and level of aspiration were all highly effective (.01) motivators for 7-8 and 10-11 year olds. No motivational variable was significantly effective with the other 2 age groups. No significant difference was found between the variables, so they seemed equally effective motivators.

Stanford University, Stanford, California

(J. E. Nixon)

425. BONZAN, Robert T. Attitudes of University Publics Toward the Contributions of the Intercollegiate Sports Program to General Education. Ed. D. in Education. 1965. 112 p. (J. E. Nixon)

An attitude scale of the Likert type concerning intercollegiate football at Stanford was prepared with a reliability of .97 using the Spearman-Brown split-half formula and acceptable validity. Random samples of faculty, alumni, undergraduate, and graduate students representing 23 subgroups and totalling 1,941 returned 1,061, or 52.8 percent of the scales. Mean differences between groups and subgroups were assessed with F at the .05 level. The general attitude was favorable, especially among alumni, undergraduate, and graduate students, but the faculty attitude was slightly unfavorable although those who received undergraduate degrees from Stanford or had served 10 or more years at Stanford were favorable. Male undergraduates were significantly more favorable than female. There were no significant differences between graduate students divided on the basis of sex or sources of baccalaureate degrees, alumni divided on the basis of graduation date or distance from campus, and faculty divided on years of service or source of baccalaureate degrees.

426. HAIRABEDIAN, Ara. Kinetic Resistance Factors Related to Body Positions in Swimming. Ed. D. 1965. 66 p. (J. E. Nixon)

A 1.5 hp motor with a clutch and reduction gears was used to tow 20 subjects 65 ft. at three steady velocities, and the water resistance was measured to 10 watts with an electronic wattmeter. Subjects were towed with the head up (water just above eyebrows), head down (water passing over the head), and chin up (water passing under the chin), and with the hands shoulder width apart or together with each head position. Analysis of variance showed a significant difference (.01 level) in favor of the head down position with the hands together except at the slowest speed where hand position made no difference.

Syracuse University, Syracuse, New York

(J. H. Shaw)

427. COREY, Whitney Thompson. An Evaluation of the Professional Preparation of Men High School Physical Education Teachers at State University College, Cortland, New York. Ed.D. in Physical Education. 1965. 192 p. (J. H. Shaw)

A list of knowledges, attitudes, and skills were rated as essential, desirable, or not needed at the undergraduate level by 4 selected groups in New York State: high school principals, supervisors of Cortland graduates, members of the state association of physical education administrators, and a jury of experts. The competencies were divided into 4 categories according to their rating by each group as: essential by 75 percent, essential by 50 percent, and essential or desirable by 89 percent, essential by less than 50 percent but essential or desirable by 89 percent, and all others. Graduates of Cortland and their supervisors were also asked to evaluate the undergraduate preparation for each competency as over-emphasized, adequate, or underemphasized at Cortland. Some of the weaknesses included: preparing a master schedule and budget, planning equipment purchases, coeducational activities, and cility care, using school and community resources in curriculum development, knowledge of laws and regulations, and performing and teaching modern dance.

428. ZOREL, Harold John. An Analysis of Selected Student Teaching Experiences and Supervisory Practices in Men's Physical Education at Syracuse University. Ed.D. in Physical Education. 1965. 347 p. (J. H. Shaw)

Case studies were made of 11 student teachers and their cooperating teachers by administering the Edwards Personal Preference Schedule to all subjects and recording interviews based on open-ended questions. A comprehensive questionnaire, half of which dealt with the effect of personality on rapport in student teaching and the other with aspects drawn from the interviews, was answered by 11 "authorities" in student teaching in physical education. Assigning student teachers to two different school levels in two different school districts was highly desirable. The overall quality of the cooperating teacher was the most important single factor, and his ability to identify intimately with the student teacher was the most important personal quality. The most important experiences in addition to teaching were identified. Certain personality variables appeared related to rapport. Possible implications for student teaching were developed.

Temple University, Philadelphia, Pennsylvania

(A. L. Olsen)

429. BAUMGARTEN, Naomi R. The Effect of Warm-Up on the Performance of a Simple Task Involving Speed of Gross Movements of the Hand and Arm. M.Ed. in Physical Education. 1965. 50 p. (J. B. Oxendine)

Forty college freshman women took 3 trials on the Minnesota Manual Dexterity Test to measure speed of arm movements after each of 4 warm-up conditions. Performance following formal warm-up (practicing the test skills) and general-related warm-up (performing similar skills) were significantly faster than after no warm-up, and formal warm-up was significantly better than general calisthenic warm-up.

430. KUNTZLEMAN, Charles T. The Effects of 1200-Calorie Diets and Partial Dehydration on Selected Neuromuscular and Cardiovascular Performances of Well-Conditioned College Men. M.E. in Physical Education. 1965. 133 p. (A. L. Olson)

College male volunteers (25) undertook intensive conditioning for 4 weeks. The 12 in best condition were assigned randomly to either a 1200-calorie liquid nutrient, a 1200-calorie solid food, or a 3200-3400-calorie normal diet with 12 oz. of water daily. They continued to train for 3 weeks and were tested after each week. All subjects lost weight during the week they were on each of the 1200-calorie diets (averages of 4.07 percent and 4.73 percent) but continued to increase their physical fitness. Analysis of variance showed no significant differences between the mean blood pressure and heart rate measurements before, immediately after, and 5 min. after exercise. Strength and reaction time also showed no significant differences.

431. MAURO, William P. An Index for Microcarded Publications from January 1949 to October 1963 in the Areas of Physiology of Exercise and Psychology. M. Ed. in Physical Education. 1965. 38 p. (A. L. Olson)

The 264 relevant microcarded studies were examined and indexed for specific content, research methods, and major statistical procedures.

432. WEISS, Morris D. Validity of the President's Council on Physical Fitness Screening Test for Seventh-Grade Boys. M. Ed. in Physical Education. 1965. 59 p. (A. L. Olson)

Physical and motor fitness were measured by the AAHPER Youth Fitness Tests plus the bent-arm hang, leg lift, shot put from a stand, and pulse rate after a 3-min. step test. The President's Council on Physical Fitness Screening Test was also administered, and the group that passed was compared on the 11 tests with the group that failed. The PCPF Test, and particularly the pull-up test, identified boys who had generally poor physical and motor fitness but did not identify boys with poor gross strength (leg lift) or cardiovascular efficiency.

University of Texas, Austin, Texas

(L. W. McCraw)

433. GLIDEWELL, William Foster. An Investigation of Various Warm-up Procedures in Relation to Physical Performance. Ed. D. in Physical Education. 1964. 105 p. (L. McCraw)

Junior high school boys (24) were subjected to the following warm-up conditions to determine the effects on speed of reaction, speed of movement, strength, and power of the leg muscles: no warm-up—10 min. rest period prior to testing; passive warm-up—20 min. period with legs between two electric blankets; cooling—10 min. period with legs encased in two ice bags; overload warm-up—exercises performed while wearing weight vest and leg weights. A treatment by subject analysis of variance revealed no pattern of differences except that performance on most tests was significantly lower after cooling the muscles than after other treatments. A tabular analysis suggested that warm-up was an individual matter since some subjects performed consistently better with a certain type of warm-up.

434. LONG, Teresa Lozano. Development of Instruments for the Evaluation of Driver Education. Ed. D. in Physical Education. 1965. 200 p. (L. McCraw)

Specific competencies were developed for driver education in terms of knowledge, attitude, and skill. A chi-square test was applied to the ratings of 60 specialists in driver education to determine those competencies considered essential for the student and those considered desirable, but not essential. Instruments for evaluating driver education programs were developed in terms of administrative procedures, personnel, and classroom methods.

435. PATTERSON, Jane Kneip. The Effects of Competitive Swimming Training on Girls in Relation to Selected Anthropometric and Strength Measurements. M. Ed. in Physical Education. 1965. 62 p. (M. Alderson)

Subjects were 12 high school girls who engaged for 5 days a week for 5 months in a competitive swimming program supplemented each day with land exercises. Comparisons of pre- and posttests of strength and anthropometric measurements of the arm, leg, chest, and waist revealed no significant differences except for strength. The greatest improvements were obtained with the more experienced swimmers.

436. RICHARDSON, Carl Calvin. An Evaluation of an Off-Season Conditioning Program for College Football Players. Ed. D. in Physical Education. 1965. 131 p. (L. McGraw)

Varsity football players (32) participated in a spring conditioning program consisting of exercises, weight training, wrestling, endurance running, and speed and agility drills. Eight tests of the strength and power of arms and legs were administered at the beginning and end of the conditioning program and at the beginning and end of the football season in the succeeding fall. A treatment by subject analysis of variance revealed significant increases in most tests during the conditioning period with subsequent decreases during the summer months. The performance at the end of the summer months was as good on all tests as it was at the beginning of the conditioning period and was significantly better in three instances. Significant improvements were obtained during the football season only in speed of the legs and power of the arms.

437. STALLINGS, Loretta M. The Role of Visual-Spatial Abilities in the Performance of Certain Motor Skills. Ed. D. in Physical Education. 1965. 105 p. (L. McGraw)

College women (42) practiced gross motor skills (speed pass, balance beam stunt, and underhand free throw) two days a week for 10 weeks. Learning scores on these skills were compared with tests of visual-spatial abilities consisting of orientation, visualization, and perceptual speed. The results of a two-factor analysis of variance and correlations at successive stages of learning revealed that spatial orientation was important in the early stages. Perceptual speed was a constant requirement throughout practice, with some indication that the need for perceptual speed increased with proficiency on the balance beam stunt. Visualization did not appear to have any appreciable relation to performance of any of the skills.

438. WUTHRICH, Vernetta Marie. The Evaluation of an Isometric Conditioning Program for Tennis Players in Terms of Developing Strength and Speed on the Forehand and Backhand Drives. M. Ed. in Physical Education. 1965. 48 p. (D. Campbell)

Junior high school boys and girls (23) participated in a daily instructional program in tennis for 6 weeks. Thirteen of the subjects engaged in 10 min. of isometric exercises prior to each class period. Both experimental and control groups improved significantly in the strength and speed of the preferred arm and in tennis skill as measured by the Dyer test, but there was no significant difference between groups.

Texas Woman's University, Denton, Texas

(A. S. Duggan)

439. BALKUS, Mary Pat. The History and Development of the Modern Dance Group of the Texas Woman's University from 1936 through 1955: Its Scope of Influence and Contributions to the Understanding and Appreciation of Dance as a Contemporary Art Form. M. A. in

**Dance and Related Arts. 367 p. (C. Sherrill)**

Reviewing the role of dance in physical education since 1900 showed initial acceptance of modern dance as a part of the curriculum and led to dance clubs at the high school and college level. The history recounted the performances, reviewed the choreographic works, and summarized the biographical data concerning members and teachers associated with the Modern Dance Group. The influence of the Group in establishing modern dance as a vital art in the Southwest depended on concerts, master classes, workshops, lecture-demonstrations, and radio and television programs.

440. **BEALL, Sue. A Survey of the Physical Fitness, Attitudes, and Interests of 288 Girls in Grades Four Through Twelve in Relation to Present Practices in Physical Education in the Navasota Public School System in Navasota, Texas. M.A. in Physical Education. 1965. 220 p. (D. Deach)**

LaPorte Score Cards I and II for programs, R. Webster Scale for teachers, AAHPER Youth Fitness Test, Carr Attitude Scale, and a modified "What We Like To Do" inventory were administered to high, junior high, and elementary school students. The elementary program was fair-minimum and the other two were good-average. The teachers were rated very good by the 5 administrators. The physical fitness scores in junior high were generally lower than in the other two groups with static arm and shoulder girdle strength showing the greatest difference. Group interests in the 13 activities varied widely.

441. **BRUSSTAR, Lorna D. JAPANESE WIND SONG: An Aquatic Art Suite Based Upon Selected Japanese Poems. M.A. in Physical Education. 1965. (J. Rosentswieg)**

The choreography was based on selected Japanese poems—"The Spider and His Web," "Spring Kimonos," "Sunburst," "Serenade of the Froglings," and "Japanese Wind Song." Recorded music was selected for accompaniment. Costumes were designed and constructed for each composition. The suite was taught to 12 synchronized swim club members and was presented in a series of public performances.

442. **CLAWSON, Alice L. The Effect of Three Types of Competitive Motivating Conditions Upon the Scores of Archery Students. Ph.D. in Physical Education. 1965. (B. Myers)**

Team competition, teacher-imposed level of aspiration, and student-set level of aspiration were compared in college archery classes on the basis of improvement in scores. The most favorable condition early in the program appeared to be individual student-set goals. The group with teacher-imposed goals improved less than the other two groups. Team competition produced positive improvements throughout the program, especially in the latter phases. Student-set levels of aspiration followed by team competition appeared to be the most desirable sequence. Greater improvement occurred before than after the midpoint in the program. Students who consistently set attainable goals showed more consistent improvement than those who consistently set goals higher than their achievement.

443. **CUNNINGHAM, Elizabeth. A Suite of Five Original Modern Dance Compositions Based Upon Selected Pre-Classic Dance Forms. M.A. in Dance and Related Arts. 1965. (A. S. Duggan)**

A modern dance suite was choreographed and produced on the basis of the Allemande, Courante, Sarabande, Minuet, and Gigue with accompanying music written in the appropriate period. The suite was unified through stylized transitional walks and courtesies.



444. FAULKNER, Thelma Ray. A Pilot Study in the Teaching of Movement Techniques and in the Development of Studies in Improvisation for Students Enrolled in a Beginning Acting Class at the Texas Woman's University. M.A. in Dance and Related Arts. 1965. (A. S. Duggan)

Units of instruction covering basic movement techniques and improvisation were developed and utilized during a 6-week experimental period in conjunction with Speech 235. Evaluation indicated that mastery of basic movements and facility in improvisation contributed materially to developing acting techniques and characterization. Combining dance and drama seemed desirable. A syllabus based on the pilot study was prepared for the course.

445. HARRISON, Darlene Klausmeyer. Analysis of Professed Participation and Interests in Recreational Pursuits with Reasons for Participation and Non-Participation on the Part of Students Enrolled in the Texas Woman's University During the Spring Semester of the Academic Year of 1963-1964. M.A. in Health and Physical Education. 1965. (B. Myers)

446. HART, Marilyn Kay Lewis. A Study of Modern Dance as a Means of Worship in the United States with Emphasis Upon the History, Development, and Contributions of the Sacred Dance Guild and Rhythmic Choirs. M.A. in Dance and Related Arts. 1965. 208 p. (C. Sherrill)

The Sacred Dance Guild originated in 1956 and has contributed to the development of religious dance in the United States primarily by sponsoring 24 workshops and 5 annual institutes. The issue of whether the major purpose of religious dance is self-expression of a devotional nature or communication with an audience or congregation through artistically-valid means needs decision. Religious dance must be recognized by lay persons as an art and treated with the respect traditionally accorded the other arts by the church.

447. HEARN, Linds S. A Study of the Fitness of Selected Women, Ages Thirty to Sixty, Enrolled in a Program of Conditioning Exercises at the Tarleton State College, Stephenville, Texas. M.A. in Dance and Related Arts. 1965. 190 p. (C. Sherrill)

Subjects were 38 women who were tested before and after a 10-week program of in-class and out-of-class prescribed conditioning exercises. A Paired Comparison Questionnaire was administered to determine the value of 12 "needs" as reasons for participating in the program. The subjects were divided into "high" and "low" exercise groups according to the amount of out-of-class exercise. Analysis of variance showed that the total group gained significantly in agility, flexibility, leg, abdominal, arm, and shoulder girdle strength, and posture but not in cardiovascular fitness or weight reduction. The high exercise group gained significantly more in leg, arm, and shoulder girdle strength and weight reduction, but the difference between mean total percentage of gain was not significant.

448. MASILUNIS, Carole Yvonne. REQUIEM IN A CLOSED ROOM: An Original Dance-Drama in Modern Dance Idiom Based Upon the Play Entitled THE HOUSE OF BERNARDA ALBA by Federico Garcia Lorca. M.A. in Dance and Related Arts. 1965. (A. S. Duggan)

The dance-drama was choreographed and produced as 8 continuous episodes with recurring themes. The piano accompaniment enhanced the moods of the atmosphere created by the choreography. The costumes, hair styles, stage set, and properties were original.

449. O'CONNOR, Patricia T. A Study of Speed and Skill in Relation to

Success Achieved by College Women Engaged in Badminton Singles Competition. Ph. D. in Health and Physical Education. 1965. (J. Rosentswieg)

Various badminton skills, specific movement times, and success in singles competition were tested. Analysis by multiple correlation and regression showed that both speed and skill were essential to success, but success depended to a greater degree on skill than speed of movement. The Miller Wall Volley Test was the best single predictor of success in singles competition and total body movement time was the best movement time predictor.

450. OSBORNE, Kay. Through a Glass Darkly: A Suite of Five Original Modern Dance Compositions Based upon a Prism of Emotions as Seen through Selected Symbolic Associations with Identifiable Objects Utilized as Stage Properties. M. A. in Dance and Related Arts. 1965. (A. S. Duggan)

The suite was choreographed and produced for a series of performances with an appropriate accompaniment and with a series of prose poems effecting transition between the separate dance compositions. The five compositions comprising the suite were: "The Point Center," obsession with safety and refuge with a chair symbolizing security, "The Vacuum," lack of communication, with wire cones worn by the dancers symbolizing isolation, "The Tendrils of Restriction," parasitic dependence on others to attain prestige with a ladder symbolizing status, "The Knife Edge," absurd subservience to authority with a pole symbolizing power, and "The Common Bond," mutual understanding and concern for others with 4 ropes symbolizing friendship.

451. SCHMITT, Patricia Ann. Descriptive Characteristics of Successful Girls' Camp Cabin Counselors and Their Attitudes Toward Children. M. A. in Physical Education. 1965. (B. Myers)

Directors selected 12 characteristics of successful counselors by paired comparison. Counselors' attitudes toward children were determined by the Minnesota Teacher Attitude Inventory. Counselors' means were compared to norms according to educational background. The characteristics for successful counseling seemed applicable to all residential girls' camps although objectives and philosophies differed. Success depended primarily on emotional maturity, good moral character, and integrity, although many outstanding character traits were demanded of counselors. Assigning counselors to their preferred age group abetted success. The Minnesota Teacher Attitude Inventory was not uniquely useful as a screening device or a sole determiner of success in cabin counseling.

452. WAGGONER, Bernice E. A Comparison of the Profiles of Temperament Traits of Women Undergraduate Students and Full-Time Teachers in Physical Education Departments in Selected Colleges and Universities in the United States, with Implications for the Guidance of Young Women Seeking Careers in this Field. Ph. D. in Physical Education. 1965. (A. S. Duggan)

An original personal data questionnaire and the 16-Personality Factor Questionnaire were administered to 816 freshman and 460 senior women physical education majors, 52 women teachers with less than 5 years experience, and 184 with more than 10 years experience in 70 institutions. "Love of sports," "physical education teachers," and "desire to help others" were primary factors in career selection. Results of 16-PF indicated undergraduate majors were practical, unpretentious, and group dependent; students and teachers were generally intelligent, emotionally stable, realistic, self-controlled, self-confident, composed, and aloof, but average in dominance. Experienced teachers were also self-sufficient and persistent. Freshman and senior majors were

similar on 8 traits; senior majors and beginning and experienced teachers were similar in 5 traits.

453. YANDELL, Katheryn. A Study of Expressed Attitudes of Freshmen Women Toward Physical Education During Their Enrollment in a Required Course in "Foundations of Physical Education" at the Texas Lutheran College. M. A. in Physical Education. 1965. (B. Myers)

The Wear Physical Education Attitude Inventory, Short Form, was used in assessing attitudes. Information concerning the 103 participants' background in high school physical education was obtained from specially prepared student information sheets completed during college entrance. The significant findings were that participation in the course contributed to a favorable modification of attitude, that high school participation in varsity athletics was correlated with favorable attitude, and that favorable attitude toward high school physical education teachers was correlated with favorable attitude toward physical education.

University of Utah, Salt Lake City, Utah

(L. R. Geser)

454. ALLSEN, Philip E. An Evaluation of the Physical Education Program for Men in Selected Junior Colleges. Ed. D. in Physical Education. 1965. 212 p. (N. P. Neilson)

Programs at 9 junior colleges in Idaho, Utah, and Wyoming were evaluated after Neilson-Comer-Allsen Score Cards were completed by the staff during a visitation. The 15 male instructors had good professional preparation and experience, but, except at two junior colleges, membership in professional organizations and attendance at meetings was substandard. The indoor facilities were superior to the outdoor facilities and the schools had difficulty obtaining gymnastic, corrective, and testing equipment. Record keeping was good, but the time allotment and enrollment were unsatisfactory. The variety of activities was too limited; intramural programs were especially weak.

455. BLACKINGTON, Marion. The Value of a Height-Weight Classification Plan as a Predictor of the Motor Ability of College Women. Ed. D. in Physical Education. 1965. 133 p. (O. N. Hunter)

A 3 x 3 height-weight classification plan was developed from heights and weights of 1332 women at Idaho State University from 1959 to 1963 using the top 25, middle 50, and bottom 25 percent on each axis. The Scott Motor Ability Test was administered to 322 women at Idaho State University grouped according to this plan during the fall semester of 1963-64. Significance of mean differences was tested for the 4 tests and the total battery. The tall group was significantly superior to the medium and short groups in total motor ability, but the differences between weight groups were not significant. The tall-slender group was significantly superior to the short-slender, short-heavy, and medium-heavy groups on the total battery. The short-heavy and medium-heavy were consistently lowest in motor ability, but no group was significantly superior on all of the test items. Separate achievement scales for the 9 groups seemed unwarranted.

456. CRANMER, Joseph W. Professional Preparation and Teaching Assignments of Health and Physical Education Teachers. Ed. D. in Physical Education. 1965. 193 p. (N. P. Neilson)

Teachers who were graduated from a 4-year teacher preparation institution in Utah from 1945 to 1963 and who taught one or more health education or physical education courses in Utah public secondary schools during 1963-64 were surveyed on the basis of the annual information sheet of

the Utah State Department of Public Instruction. Institutional catalogues were reviewed for graduation requirements, and accrediting regulations from 1945 to 1963 were surveyed. Departmental requirements have been increased to exceed institutional requirements. Deficiencies in preparation could be eliminated by adjusting curriculums at Brigham Young, Utah, and Utah State Universities. Lack of a common system for classifying and naming courses caused unnecessary confusion. Needless overlapping occurred in methods courses. Certification requirements had remained quite stable but compared favorably with current standards although the minimum requirements of the Northwest Association of Secondary and Higher Schools were too low. Many athletic coaches were employed without due consideration of their qualifications for major teaching assignments. Health education majors and driver education teachers were in short supply.

457. HANKIN, John Francis. The History of College Wrestling at the University of Utah. M.S. in Physical Education. 1965. 159 p. (O. N. Hunter)

Wrestling was introduced in 1897 but was not well organized until inter-collegiate competition began in 1923. Wrestling developed markedly under Sherman Couch (1931-1938) and Karl Schleckman (1938-1943, 1945-1954). The University gained recognition as one of the top wrestling schools in the United States under Marvin G. Hess (1956-).

458. HOFF, Michael Kirk. Student Programs Sponsored by Religious Groups in Cooperation with the University of Utah. M.S. in Recreation. 1965. 64 p. (J. L. Squires)

Data were collected by questionnaire and interview concerning objectives, financing, programs, facilities, eligibility, and relation to the University. The groups had common objectives of worship, education, fellowship, leadership, and service. All but the Newman Student Foundation had full-time directors whose main responsibilities were counseling, programing, and public relations. Financing varied from fees to endowments. The average number of student leaders was 10, but the L. D. S. Institute of Religion had 75. Programs varied but the most popular was group discussion. The groups had their own facilities and also used campus facilities. The University considered the groups most welcome but the relationship was not very functional.

459. HUDSON, Don R. A Clinical Approach to Physical Education for College Men. Ed. D. in Physical Education. 1965. 99 p. (N. P. Neilson)

The Illinois Agility Run, Harvard Step Test, and chin-up, push-up, sit-up, back extension and leg extension tests were given to 814 students in the required program who were also classified into height-weight groups by Cozens' method. Constructing separate achievement scales for the 9 groups proved unfeasible since 3 groups had essentially similar performance on the agility run and chin-ups. Activities common to college programs were rated by experts according to their contribution to neuromuscular and organic fitness. A counseling program was developed on the basis of test deficiencies and recommended activities. The tests were not as valid as would be desirable for counseling and their reliabilities and objectivities were low. The push-up, sit-up, and chin-up tests appeared to measure the same factor. Students who scored low in one test tended to score low in others. The freshmen did not fit Cozens' classification as well as expected. The ratings of all activities tended to be high; wrestling was considered the best overall activity. The counseling system seemed desirable after improvement.

460. MARCHETTI, Edwin Brent. An Evaluation of the Design

Components for a Recreation Program for Nursing Home Residents.  
M.S. in Recreation. 1965. 81 p. (J. L. Squires)

Salt Lake County had 94 licensed nursing homes with capacities from 5 to 132 for geriatric patients with an average age of 70 years. Many homes offered little recreation and a number needed therapeutic recreation programs. A proposed program to meet interests and needs was developed. A panel of five experts in recreation and mental health evaluated the 37 criteria for the program with all agreeing on 20 criteria and four agreeing on 14 criteria. The key element in the recreation program was leadership.

461. PALATH, Margot. The Discovery of Movement Forms from Visual and Auditory Responses to a Verbal Stimulus. M. A. in Dance. 1965. 33 p. (E. R. Hayes)

Subjects (30) from liberal arts and physical education responded to one of 5 sentences expressing types of frustration, grief, hate, freedom, and love by making a charcoal drawing and then audible responses with percussive instruments. The percussive responses were played back as a basis for a second charcoal drawing. Selections for choreographing solo and group work were made on the basis of clarity, variation in texture and tension, and appropriateness to the expressed feeling. The dance concert involving new movement forms derived from drawings and sounds was recorded on 8 mm film and taped to show the possibilities for exploring movement by this method.

462. PEXTON, Boyd Maurice. Fitness of Elementary School Pupils. Ed.D. in Physical Education. 1965. 146 p. (N. P. Neilson)

Elementary school teachers in Salt Lake City found the testing portion of the Youth Physical Fitness manual produced by the President's Council in 1961 usable, but the exercise portion was difficult to use because tempo and repetitions were not indicated. A standardized phonograph record with music, instructions, and calls was developed but could not be reproduced because of copyright restrictions, so a record using music recorded by one company was developed ("Fifteen for Fitness" album, Windsor Records, WLP 3-06). Two classes each from 3 schools provided an experimental group of 175 grade 5 and 4 boys and girls and a similar control group of 173. The AAHPER Youth Fitness Test was administered before and after a 10-week evaluation period during which the physical education programs were similar except that the experimental group began each period with the standardized record program. The students were classified with the Neilson-Cozens Classification Index, and percentile scores were obtained from the national norms. The experimental group showed greater improvement on 6 of the 7 tests. Significant differences with uncorrelated  $t$  were found in favor of the experimental group in the 50-yd. dash (.01 level), experimental boys in the shuttle run (.01 level), and the experimental girls in the sit-ups (.05 level). The standardized fitness exercise program seemed desirable and enjoyable.

463. SNEDDON, Scott. History of the Desert Gymnasium. M.S. in Physical Education. 1965. 78 p. (J. L. Squires)

The building, owned and operated by the Church of Jesus Christ of Latter-day Saints, was opened to all persons of good character in the Salt Lake Valley on September 20, 1910, to provide physical, mental, and social development. Scrapbooks and newspaper articles provided the majority of information concerning the constant expansion and modernization of facilities and programs. The four chief administrators were Bryant S. Hinkley (1910), Hemming C. Mortensen (1933), P. Drew Clark (1943) and Wayne Player (1959). The original gymnasium was razed and the new \$2,500,000 gymnasium was completed and dedicated in January 1965 at a new location.

464. SOUVALL, George N. The History of Interscholastic Athletics at South High School. M.S. in Physical Education. 1965. 146 p. The chronological review from 1931 to 1965 was prepared from available sources for this Salt Lake City high school. The city schools formed a City or ABC League in 1934 with championship awards in each sport based on won-lost records of three teams classified according to age, height, and weight. After the middle forties, the city schools formed a series of conferences with schools in the Davis School District and finally the Conference League. South High School has had the finest athletic facilities in the state but has suffered from commercial and industrial encroachment. The present conference has proven weak because of excessive travel distance, poor weather, low gate receipts, and unequal competition from the smaller northern schools.
465. SYLVESTER, Blaine Eugene. The History of Intercollegiate Baseball at the University of Utah. M.S. in Physical Education. 1965. 201 p. The first recorded game was on May 29, 1886, when Joseph T. Kingsbury, a strong advocate of baseball, was President of the University of Deseret. Baseball continued intermittently at the University of Utah until 1921 when it was discontinued by the administration. Baseball was revived in 1948 under the direction of Vadal Peterson and has continued with noteworthy success since 1953 under the direction of President Summerhays.
466. YOUNG, Martha Parrott. The Functions of Dance Criticism. M. A. in Dance. 1965. 78 p. (E. R. Hayes) Ideal functions of critics were ranked according to the number of times mentioned by 30 experts on criticism. Actual functions of critics were ranked according to number of times they were performed in 200 dance criticisms by 10 dance critics. The functions of critics were subdivided into unmeasurable aims and measurable tasks, which were subdivided into primary, secondary, and tertiary tasks. The primary tasks alone correlated significantly (.814) with the actual functions. The three top-ranked tasks were judgment, re-creation, and elucidation; the remaining three were determining style, analysis, and crusading for dance.
- Washington State University, Pullman, Washington (R. C. Wiley)
467. ANDERSON, James Tyrus. Learning Curves for Total Body Reaction Time. M. A. T. in Physical Education. 1965. 48 p. (R. C. Wiley)
468. BAKER, Richard B. A Study of Sprinting Times on a Grass and a Cinder Surface. M.S. in Physical Education. 1965. 34 p. (R. H. Doornink)
469. BEASLEY, James Richard. The Status of Football in Certain Junior High Schools of the State of Washington. M.S. in Physical Education. 1965. 121 p. (V. P. Dauer)
470. BYE, Joann Roberta. A Basic Curriculum for a Leadership Training Seminar. M. A. in Recreation. 1965. 79 p. (A. M. McQuarrie)
471. CHI, Pei Lin. A Comparison of Two Modified Pull-ups for Girls as Predictors of Arm Flexor Strength. M.S. in Physical Education. 1965. 36 p. (V. P. Dauer)
472. GRENFELL, James E. The Effect of a Structured Physical

- Education Program on the Physical Fitness and Motor Educability of the Mentally Retarded School Children in Whitman County, Washington. M.S. in Physical Education. 1965. 82 p. (V. P. Dauer)
473. HATFIELD, Robert W. A Study of Grading Procedures and Practices in Physical Education. M.A.T. in Physical Education. 1965. 39 p. (V. P. Dauer)
474. HEINRICK, John Robert. A Study of Selected Public Community College Athletic Programs in the Northwest Association of Secondary and Higher Schools. M.A.T. in Physical Education. 1965. 64 p. (R. C. Wiley)
475. HOHMAN, William David. The Status of the Professional Preparation of Athletic Coaches in High Schools in the State of Washington. M.S. in Physical Education. 1965. 52 p. (V. P. Dauer)
476. HULSTRAND, Bonnie Jean. The Effect of the Pelvic Width Relative to Lateral Foot Placement on the Success of the Sprint Start for Women. M.S. in Physical Education. 1965. (V. P. Dauer)
477. IYALL, Daniel Victor. A Comparison of Two Methods of Executing the Bunt in Baseball. M.S. in Physical Education. 1965. 38 p. (R. H. Doornink)
478. JAMES, Roger D. Comparison of Physical Fitness Indices of Washington State University Freshmen Men Having Varying Years of Participation in High School Physical Education and Athletics. M.S. in Physical Education. 1965. 77 p. (R. C. Wiley)
479. McCLIMON, Daniel Robert. The Effects of Strenuous Exercise Upon Total Body Reaction Time. M.S. in Physical Education. 1965. 54 p. (P. D. Gollnick)
480. PECKA, Alvin Dal's. The Effectiveness of Rope Jumping as an Activity for Improving Agility of Junior High School Boys. M.S. in Physical Education. 1965. 30 p. (R. H. Doornink)
481. PENHALLEGON, William James. Mechanical Analysis of Ski Turns. M.S. in Physical Education. 1965. 82 p. (P. D. Gollnick)
482. POOPE, Stanley K. A Study of Intramural Athletics in Selected Western Junior Colleges and a Proposed Program at Skagit Valley Junior College. M.S. in Physical Education. 1965. 81 p. (V. P. Dauer)
483. RANNIGER, Duane Stephen. The Effect of Using Ankle Weights on the Vertical Jumping Ability, Leg Strength, and Agility of Male High School Basketball Players. M.S. in Physical Education. 1965. 43 p. (R. H. Doornink)
484. SMITH, Dennis Brooks. The Reliability of a Hand-Eye, Foot-Eye Coordination Test. M.S. in Physical Education. 1966. 39 p. (P. D. Gollnick)
485. SNYDER, Richard L. The Determination of the Significant Differences Between Mean Scores Made on the Washington State Motor Fitness Test by the Groups Tested in 1957-58 and 1964-65. M.A.T. in Physical Education. 1965. 38 p. (R. H. Doornink)



486. UNDLIN, Malvin G. A Comparison of Four Methods of Circuit Training. M.S. in Physical Education. 1965. 48 p. (R. H. Doornink)
487. VAN TINE, Harold Curtis. The Use of Pegboards as a Means of Developing Arm Strength. M.S. in Physical Education. 1965. 33 p. (V. P. Dauer)
488. VEACH, Norman C. The Development of a Program Learning Text for Teaching of Football Rules. M.S. in Physical Education. 1965. 93 p. (R. H. Doornink)
489. WERNER, Bruce I. Coeducational Physical Education at the Elementary School Level. M.S. in Physical Education. 1965. 94 p. (V. P. Dauer)
490. YONCK, Richard S. The Status of the Junior High School Interscholastic Track Program in the State of Washington. M.S. in Physical Education. 1965. 64 p. (V. P. Dauer)

University of Washington, Seattle, Washington

(M. R. Broer and R. K. Cutler)

491. ANDERSON, Aldo N. A History of the Men's Pacific Northwest Regional Softball Tournament from 1944 to 1964. M.S. in Physical Education. 1965. 195 p. (C. Mills)
- Pertinent material was obtained from interviews, newspapers, personal scrapbooks, tournament programs, and minutes of the commissioners' meetings. Harold Shaw, a Seattle sportswriter, originated the tournament with financial assistance from the "Seattle Post Intelligencer." The Northwest commissioners of the Amateur Softball Association have made periodic changes to improve the tournament. Some additional changes were suggested.
492. BAKER, Bruce L. An Analysis of Evaluation Techniques in Physical Education for Male Students in Selected Junior High Schools in the State of Washington. M.S. in Physical Education. 1965. 76 p. (C. L. Peek)

Questionnaire returns from instructors indicated that they used attendance as an important factor in determining grades and that they did not use standardized sport skill tests to any significant degree. This was contrary to the recommendation of leading authors.

493. BECKER, Robert E. A Survey of Men's Sports Clubs of Selected Colleges and Universities in the United States. M.S. in Physical Education. 1965. 151 p. (J. A. Tourney)
- Questionnaires were sent to all intramural directors of institutions with enrollments of over 5,000 and of the largest one or two institutions in states where enrollments were lower. Sports clubs generally existed mainly for students, had advisers, were subsidized to a limited degree, were inadequately financed, desired extramural competition, lacked health controls, and represented a wide variety of sports. The trend was to place them under intramural supervision.
494. BUCK, Laron C. A Study of Successful Class A and AA High School Football Coaches in Washington State and the Offensive and Defensive Methods They Utilized During the 1964 Season. M.S. in Physical Education. 1965. 83 p. (E. Hughes)
- Questionnaire returns from 59 successful coaches showed a high degree

of conformity in their training, participation, coaching experiences, professional duties, and methods of coaching offense and defense.

495. CANT, Margaret V. A Further Investigation of the Effect of Participation in Selected Activities on the Heart Rate Responses of College Women. M.S. in Physical Education. 1965. 200 p. (E. Culver)

Quiet resting and anticipatory, activity, and recovery EKGs were telemetered from 19 volunteers, aged 18 to 23 years, participating in classes at the beginning, intermediate, or advanced level of badminton, basketball, or dance or in intramural basketball and while alternately walking and running for 15 min. Heart rates tended to be higher as the skill level increased, at corresponding levels of sports than in dance, and in basketball than in badminton. Anticipatory heart rates were indicative of activity rates, and the best single indicator of mean activity heart rate was the 5 min. recovery rate. (See CRHPER, 7, III, 425.)

496. COLE, William L. A Comparison of the Effect of Isometric and Calisthenic Exercises on the Physical Performances of Selected Eleventh Grade Boys in Lake Washington Senior High School District 414, Kirkland, Washington. M.S. in Physical Education. 1965. 90 p. (C. A. Mills)

The AAHPER Youth Fitness Test was administered to 2 groups of 27 boys each. One group performed isometric exercises 10 min. a day for 8 weeks while the other performed calisthenics for the same period. The isometric exercise group improved significantly more only in abdominal strength.

497. DALY, Jack J. The Comparative Merits of the Squad Exercise and Circuit Training Programs in Attaining Physical Fitness for Elementary School Pupils. M.S. in Physical Education. 1965. 94 p. (J. A. Torney, Jr.)

The 5-Item Washington State Elementary School Physical Education Test was administered to 2 groups of grade 5 and 6 students before and after an 8-week program. Both groups had regular physical education 4 days a week for 20 minutes and spent the remaining 6 minutes in either squad exercises or circuit training. The squad exercise group showed definite improvement in only one item but the circuit training group improved on all items and their total physical fitness improvement was significant at the .01 level.

498. FISHER, Betty J. The Effects of a Program on Physical Conditioning on High School Girls Who are Smokers and Nonsmokers. M.S. in Physical Education. 1965. 77 p. (M. R. Broer)

Forty nonsmokers and 36 smokers were given the Washington State Physical Fitness Test and a modified Harvard Step Test before and after a 6-week program of basketball and badminton instruction combined with circuit training. Nonsmokers were significantly better on the pretest in squat thrusts and total physical fitness, and smokers were significantly superior on the step test. On the retest, nonsmokers were superior in every item and significantly better in the jump and reach, squat thrusts, flexibility, and total fitness. Nonsmokers showed significant improvement in all test items except agility and flexibility. The smokers showed significant improvement in curl ups and squat thrusts but were poorer in agility, flexibility, and the step test. Comparing mean improvements showed significant differences in favor of the nonsmokers for flexibility, jump and reach, total fitness, and the step test. Smoking seemed to affect total physical fitness and cardiovascular fitness adversely but not the development of muscular endurance.

499. GALA, Rosemary. The Effect of Two Gripping Positions on Performances of College Women on the Modified Pull-Up and Bent-Arm Hang Tests and the Action of Selected Arm and Shoulder Girdle Muscles as Indicated by Electromyography. M.S. in Physical Education. 1965. 137 p. (E. Culver)

Women volunteers from physical education classes (57) were tested in the bent-arm hang and modified pull-ups with both supinated and pronated grips, in flexion and extension strength of the right and left elbow and shoulder with a cable tensiometer, and in right and left grip strength with a dynamometer. The highest and lowest 4 on the bent-arm hang and modified pull-ups had electromyographs taken from the right and left biceps, long head of the triceps, brachioradialis, posterior deltoid, and upper portion of the trapezius. The supinated grip proved better than the pronated grip but grip strength had little relation to either test. The modified pull-up with a supinated grip correlated slightly better with arm and shoulder strength than that with the pronated grip, but the reverse held for the bent-arm hang. The modified pull-ups with either grip correlated slightly better with strength than the bent-arm hang with either grip. Some differences in muscle action between performance levels, exercises, and grips were noted.

500. GRANT, Douglas M. Performance by Ninth Grade Boys in Selected Track and Field Events as Indices of All-Around Track and Field Ability. M.S. in Physical Education. 1964. 76 p. (G. S. Reeves)

Grade 9 boys (83) were tested in 7 track and field events. The intercorrelations were all positive and averaged .523. The 100-yd. dash had the highest average correlation with the other events (.643), and the shot put had the lowest (.412). Success in the 100-yd. dash was the best index of success in other events.

501. HAUGEN, Richard F. An Evaluation of the Physical Fitness Test Scores of Male Freshmen Attending the University of Washington, 1959-60 and 1964-65. M.S. in Physical Education. 1965. 117 p. (G. S. Reeves)

The AAHPER Youth Fitness Test was administered to 213 male freshmen at the University during the winter quarter of 1964-65. The results were compared with similar testing during the 1959-60 winter quarter (CRHPER, 3, III, 355). The 1964-65 freshmen were significantly better beyond the .05 level in softball throw, 600-yd. run-walk, pull-ups, standing broad jump, sit-ups, and cumulative score but significantly worse in the shuttle run. The 50-yd. dash showed no significant difference.

502. JESSE, Frank R. A Survey of Administrative Policies and Practices Pertaining to Jointly-Operated Indoor Swimming Pools in Selected Cities in the United States. M.S. in Physical Education. 1965. 77 p. (J. A. Torney)

Questionnaires were sent to each city in the United States having one or more indoor pools operated jointly by city schools and city recreation departments. The returns indicated that most such facilities were on or near school property, that the control and operating costs were under the school during the school year and the recreation department during the summer months, and that formal contracts were generally not necessary.

503. JOCHUMS, Richard M., Jr. A Survey of the Procedures Involved in Obtaining and Operating Selected Community Swimming Pools Under Private Incorporation in the Greater Seattle Area. M.S. in Physical Education. 1965. 175 p. (J. A. Torney, Jr.)

Reference material concerning the 23 such pools was obtained by separate questionnaires completed by one of the founders, the present chairman of the controlling boards, and the present pool managers. The returns indicated how such pools were originated, controlled, and operated with particular reference to administration, membership, facilities, financing, personnel and program.

504. JOHANNESSEN, Arnold W. A Comparative Study of Certain Traits and Qualities of Junior High School Physical Education Teachers and Teachers of Other General Subject Areas in Selected Schools of King County, Washington. M.S. in Physical Education. 1965. 87 p. (C. L. Peek)

One physical education teacher and one subject matter teacher from the 36 schools were selected randomly by their principals. Each teacher completed a questionnaire and took the 150-item Minnesota Teacher Attitude Inventory dealing with teacher-pupil relations. The attitudes toward teaching and students were similar in the two groups. Physical education teachers were further advanced in graduate work, were members of more professional organizations, read more professional literature, had more students in their classes, and participated in more extra-school experiences than the other teachers.

505. JOHNSON, Jack M. A Survey of the Present Practices and Opinions Relative to Junior High School Intramural Sports Programs in Tacoma, Washington, 1965. M.S. in Physical Education. 1965. 525 p. (J. A. Torney)

A questionnaire surveying practices and opinions concerning programs and administration was formulated with the help of the local school committee and completed by the 21 men and women intramural directors involved. The results were evaluated by 8 competent men and women at 4 institutions of higher learning in the State. Numerous recommendations concerning programs and administration were formulated.

506. KELLY, Darlene A. The Relative Effectiveness of Selected Mental Practice Techniques in High School Girls' Acquisition of a Cross Motor Skill. M.S. in Physical Education. 1965. 132 p. (B. J. Purdy)

Five groups of girls used different practice methods with 20 rehearsals/day for 10 days in learning the overhand volleyball serve. Imagery-mental practice consisted of looking at a series of photographs and imagining successful performance. Verbal-mental practice consisted of reading a checklist of verbal cues and imagining successful performance. Physical-mental practice involved 10 actual trials and 10 imagery-mental rehearsals. One group used physical practice and another no practice. Group means on an overhand volleyball serve test showed that the physical, physical-mental, and verbal-mental groups were significantly higher than the imagery-mental group but were not significantly different from each other. Actual practice was not significantly better than no practice.

507. LEWIS, Jack A. The History of Washington State Interacholastic Track and Field Championship Meets From 1924 Through 1964. M.S. in Physical Education. 1965. 213 p. (N. F. Kunde)

Factors contributing to the growth and development of the meets were determined and discussed.

508. MAROC, Dona Jean. The Effect of Two Programs of Circuit Training on the Physical Fitness of College Women. M.S. in Physical Education. 1965. 175 p. (K. Fox)

Sixty-two undergraduate women were tested in agility, lower back and

hip flexibility, arm and shoulder girdle strength and endurance, abdominal strength and endurance, and general endurance before and after 18 class periods including either 10 min. of circuit training, 20 min. of circuit training, or 15 min. of progressive conditioning exercises. All within group improvements were highly significant. Both circuit training groups improved significantly more than the progressive exercise group in flexibility, endurance, abdominal strength and endurance, and total physical fitness; however, their improvements were quite comparable. Initial performance correlated substantially with progress on the circuit and posttest performance.

509. McALLISTER, Ronald W. The Effect of Duration of Physical Education Participation on the Physical Fitness Achievement of Junior High School Boys. M.S. in Physical Education. 1965. 85 p. (R. K. Cutler)

The Washington State Physical Fitness Test was administered to grade 8 boys in 4 schools at the beginning and end of the fall semester and at the end of the spring semester. All subjects had a daily physical education program for 20 weeks during the fall semester and showed highly significant gains. The group that continued physical education for 20 weeks during the spring semester improved slightly and the group that discontinued it regressed slightly, so the final mean difference was significant at the .01 level.

510. McCARTY, Arthur Robert. A Survey of the Physical Education Departmental Organization, Curriculum, and Facilities in the Community Colleges of the State of Washington, 1964-65. M.S. in Physical Education. 1965. 178 p. (G. S. Reeves)

The LaPorte Score Card No. 11, revised for junior colleges, was applied to the 13 junior colleges. The colleges were above the average (15.00) for departmental organization, facilities, and total program. Most were below average in curriculum because they lacked swimming pools and modified or corrective activities.

511. MILLS, Fred M. The Relationship of the Speed of Growth as Assessed by the Wetzel Grid to Physical Fitness and Academic Achievement of Seventh-Grade Students. M.S. in Physical Education. 1965. 103 p. (E. L. Hughes)

Speed of growth was judged on the basis of the auxodromes in terms of actual growth relative to predicted growth from the autumn to the spring semester. The AAHPER Youth Fitness Tests were administered both times and academic achievement was based on grades. The physical fitness scores and academic grades were distributed in 5 categories, and relationships between the autumn and spring data were obtained by chi square. Some tests of physical fitness showed a relationship to speed of growth. The fast acceptable growers were affected more by their growth pattern than the other groups, but no significant relationships were found.

512. RICHARDS, James W. Analysis of Duties and Responsibilities of Physical Education Supervisors in the First Class Districts of Washington 1964-65. M.S. in Physical Education. 1965. 100 p. (L. W. Stevens)

Questionnaire and opinionnaire returns from supervisors indicated that having a physical education major, a master's degree, and 5 to 10 years experience was desirable before becoming a supervisor. Nearly all performed some public relations work and had responsibilities other than supervision, primarily planning new facilities and preparing equipment lists. Very few instructed physical education classes regularly, and nearly all rated using physical fitness tests important. Their most

important duties were visiting teachers, holding workshops, and advising individual teachers on problems.

513. STALLARD, Mary L. The Effect of Two Learning Methods and Two Grips on the Acquisition of Power and Accuracy in the Golf Swing of College Women Beginning Golfers. M.S. in Physical Education. 1965. 97 p. (B. J. Purdy)

The subjects were 56 college women in 4 beginning golf classes at the University. During the instructional unit of 14 periods, each class used a different combination of the whole or part-whole method with the overlapping or 10-finger grip. Power was measured by a drive for distance with the 5 iron; accuracy was measured with a 90-yd. approach shot, and T Scores of these were combined for a general golf ability test. Analysis of variance showed consistent differences in favor of the whole method that were significant for the approach shot and golf ability. The mean differences also were in favor of the overlapping grip and the combination of overlapping grip and whole method, but these were not significant.

514. TICE, Louis E. Opinions of Parents, Students, and Selected Professional Persons Concerning Content for an Eleventh-Grade Coeducational Health Class 1963-64. M.S. in Physical Education. 1965. 90 p. (G. S. Reeves and C. A. Mills)

The 15 of 67 topics considered most important by all groups were: development of emotional maturity, problem of narcotics, accepting reality, problems of alcohol, dangers of self-medication, venereal disease control, establishing maturing sex roles, managing personal problems, importance of health examinations, a balanced regimen of food, exercise, sleep, relaxation, work and study, understanding your personality and that of others, care of teeth, coping with stress and tension, responsibility for safety, and human reproduction.

515. WALLORF, Paul J. Methods for Rating Defensive Proficiency of High School Football Players. M.S. in Physical Education. 1965. 87 p. (C. A. Mills)

A rating scale to evaluate defensive performance from game movies and to motivate improved performance was developed and utilized at Cleveland High School.

Wayne State University, Detroit, Michigan

(P. Berlin)

516. HARRINGTON, Dorothy. Attitudes of Later Elementary Children Toward Physical Education and Their Physical Fitness Status. M.Ed. 1965. 78 p. (P. Berlin)

Attitudes of 433 Grade 6 children toward physical education were measured with a 5-point invertible scale patterned after Wear. Scores were also obtained for 6 items of the AAHPER Youth Fitness Test. Results were standardized by using stanines. The Pearson product-moment correlation between attitudes and fitness scores was .104.

517. RALLIS, Socrates. A Comparison of Three Training Programs and Their Effects on Five Physical Fitness Components. M. Ed. 1965. (P. Berlin)

Grade 11 boys in physical education classes were measured in flexibility, agility, speed, muscle power and endurance of the arms (1-minute push-ups), and muscle power and endurance of the legs (1-minute squat jumps) before and after 8 weeks participation in isometric, weight training or regular physical education programs. The following conclusions were based on significant t ratios: weight training was superior to

regular physical education for improving muscle power and endurance of the arms and legs; isometric training was superior to the other programs for improving muscle power and endurance of the arms.

518. SWANSON, Richard A. History of Physical Education in the Detroit Public Schools. 1964. M.Ed. 156 p. (P. Berlin)

Health and physical education were added to the curriculum in 1890 and the program evolved from the early militaristic approach to the present child-centered, democratically-oriented curriculum. The material was presented in chronological order according to the periods of leadership and included the growth of extracurricular activities, effects and implications of compulsory state legislation, and current status.

West Virginia University, Morgantown, West Virginia (F. J. Holter)

519. BRUCE, Rita Gabrick. An Analytical Study of Policies and Practices in School Health. D. Ed. in Health Education. 1965. 239 p. (F. J. Holter)

520. GRANELL, Vincent. A Survey Study of the Health Services, Healthful Environment, Health Education, and Health Coordination of the Florida Elementary and Secondary Schools Health Programs. D. Ed. in Health Education. 1965. 279 p. (F. J. Holter)

Wisconsin State University, La Crosse, Wisconsin (E. J. Gershon)

521. SCOTT, Robert S. A Comparison of Teaching Two Methods of Physical Education with Grade One Pupils. M. A. in Physical Education. 1965. 64 p. (E. J. Gershon)

Five groups of grade 1 boys and girls (29 in each) had 5-month programs of informal instruction 4 times a week, formal instruction 4 times a week, informal instructions twice a week, formal instruction twice a week, or no physical education. The groups had no significant initial differences in physical fitness or perceptual motor development. Tests after the programs showed no significant differences at the .05 level in perceptual motor development, but the groups with regular instruction were significantly better in physical fitness and significantly worse in the development of creative ability than the group with no physical education. The effects were similar for boys and girls.

University of Wisconsin, Madison, Wisconsin (J. G. Wolf)

522. BECK, Marjory C. The Path of the Center of Gravity During Running in Boys, Grades One to Six. Ph. D. in Physical Education. 1965. 189 p. (R. B. Glassow)

Four boys in each grade with superior 30-yd. run times were photographed when they were in grades 1, 3, and 5 and again when they were in grades 2, 4, and 6. The center of gravity was determined by the segmental method in each frame of the 24 observations from the time the left foot contacted the ground until it contacted the ground again. It described a wave-like path with the low point shortly after foot contact and the high point at or shortly after take-off. The average period of foot contact approximated .12 second for all groups. The average horizontal travel/stride increased from 98.8 in. in grade 1 to 131.1 in. in grade 6. The average percent of time in flight increased from 45.3 in grade 1 to 51.3 in grade 6. The average percent of time in contact with the ground devoted to propulsion increased from 54.3 percent in grade 1 to 60.0 percent



in grade 6. The average 30-yd. run times excluding the first 5 yards were respectively: 5.1, 4.8, 4.8, 4.5, 4.4, and 4.0 seconds.

523. BLIEVERNIGHT, Jeanne Gelner. Accuracy in the Tennis Forehand-Drive - A Cinematographic Analysis. M.S. in Physical Education. 1965. 132 p. (E. M. Roberts)

The basis for horizontal (right-left) accuracy in the forehand drive was studied by taking movies from overhead and at the side of two skilled, right-handed, male tennis players driving at targets on the right and left side of the court. Twenty-five drives for each player were analyzed in terms of departing ball direction, distance of ball from target, ball-body relations, foot and step direction, joint angles and inclinations, spinal rotation, and stroke path. Point of contact with relation to the body was important to accuracy. Racquet angles for all drives in one direction were approximately the same. The inclination of body segments indicated ball direction, but joint angles seldom indicated ball direction. Evidence concerning the angle of rebound was inconclusive.

524. BROOKE, John Dennis. The Effects of a Six-Week Program of Circuit Training On the Work Output, Speed of Muscular Response and Performance Decrement in Boys 13-15 Years of Age. M.S. in Physical Education. 1965. 92 p. (G. L. Rarick)

The effects of circuit training and educational gymnastics programs were compared using two groups of boys at Coventry Boarding School, Cleobury Mortimer, England, in programs extending over a period of 6 weeks each. The tests at the beginning and end included sit-ups, leg raises, bench jumps, squat jumps, press-ups, and pull-ups. Three scores were obtained on each test: work output (repetitions/minute), speed of response (highest repetitions/10 sec.), and performance decrement (decrement curve for repetitions in succeeding 10-sec. intervals). Circuit training produced significantly greater gains in three of the performances—chiefly from increased speed of muscular response—but the performance decrement rates were not significantly different.

525. CHAPMAN, Peggy. A Comparison of Three Methods of Measuring Swimming Stroke Proficiency. M.S. in Physical Education. 1965. 85 p. (M. R. Liba)

The three methods were time and distance with number of strokes held constant, distance and number of strokes with time held constant, and time and number of strokes with distance held constant. Intermediate and advanced swimmers (98) were rated twice on separate days by three judges while swimming one length each using the elementary backstroke, crawl, sidestroke, and back crawl. A single administration of the tests was adequate. Using ratings as a criterion had limited value. Validity coefficients for measures of glide strokes were satisfactory, but those for speed strokes were not adequate. Measurement of time and number of strokes with distance held constant was the preferred test.

526. DEMPSEY, Jerome A. Pulmonary-respiratory Response to Increased Energy Demands in Obesity. Ph.D. in Physical Education. 1965. 185 p. (B. Balke)

Previous studies indicate that increased work of breathing leads to a reduction of effective pulmonary ventilation among obese individuals. Alveolar arterial gas exchange, the physiological cost for external work, and the aerobic work capacity were investigated in normal and obese (body weight above 110 kg.) individuals during physical exercise on the bicycle ergometer. The results indicated that the majority of obese subjects responded to exercise with a more rapid and shallow breathing pattern, a lower pulmonary diffusing capacity with elevated A-a PO<sub>2</sub> gradients, a reduced maximum aerobic capacity, but greatly increased energy

requirements per unit of work output. The majority of obese persons more than adequately met the rising requirements for CO<sub>2</sub> elimination during moderate, severe, and all-out work.

527. EDWARDS, Janet. A Study of Three Measures of the Tennis Serve. M.S. in Physical Education. 1965. 128 p. (M. R. Liba)  
A subjective rating form was developed to assess serving ability. The Wisconsin Wall Test was used to measure behavior of the ball. The Whackit-Racket, a practice device, was used to measure serving skill in limited space. College women (45) ranging from beginners to advanced tournament players were tested twice, one week apart, with the 3 tests. The subjective rating form and Wisconsin Wall Test both had reliability coefficients above .90 and were valid measures, but the Whackit-Racket should not be used to test tennis serving ability.

528. HOYE, John C. Pre-Test and Post-Test of Health Information Possessed by Students Enrolled in the Course "Health Information for Teachers." M.S. in Health Education. 1965. 116 p. (W. Southworth)

The purposes of the study were to measure the student gains in health knowledge during a specific course in health science, to develop an instrument for measuring health knowledge, to administer the instrument both at the beginning and at the end of the course, to make selected comparisons and evaluations of the resultant scores; to revise the original instrument as the need may be indicated by its trial use, and to arrive at some conclusions and recommendations. The 250-item test based upon Health for the College Student by J. F. Williams and Angela Kitzinger proved to be a reliable instrument for measuring health knowledge.

529. JONES, Annie Lee. Fiscal Study of Physical Education at the School District Level in Wisconsin. M.S. in Physical Education. 1965. 72 p. (F. McPherson)

The purpose of the study was to investigate the relation of time allotment with a specialist and class size to school district budgetary factors—sources, amounts, and allocations of funds—and indicators of community wealth. Information on time allotment and class size was collected by questionnaires from school district and administrators. Enrollment, tax, and general budget data were available from the Wisconsin Departments of Public Instruction and Taxation. None of the variables investigated was related significantly to time allotment and class size in the Wisconsin school districts.

530. KLATT, Lois Ann. A Comparison of Factors Related to Force and Direction of Force in the Performance of Above Average and Superior Women Bowlers. M.S. in Physical Education. 1965. 78 p. (M. R. Liba)

Twenty women in each group from Milwaukee, Wisconsin, were judged on such variables as force and direction of the ball, ball-pin contact, and experience. The superior bowlers as a group had a greater number of strikes, doubles, and marks in the last frame and higher first and second ball percentages. They used a heavier ball, had a greater grip strength, imparted more velocity to the ball, and their balls had greater momentum and kinetic energy. They had a greater number of premium pocket hits, used a hook ball delivery, bowled more games per week, and had bowled longer.

531. LINFORD, Anthony Gerard Francis. The Effect of Variations of Knee Angle Upon Maximum Leg Strength. M.S. in Physical Education. 1965. 90 p. (G. L. Harlick)

Twenty male graduate students were tested for maximum leg strength at

5 knee angles between  $115^{\circ}$  and  $164^{\circ}$ . The dynamometer incorporated strain gauges, a carrier amplifier, and a Honeywell 1508 Visocorder Oscillograph. The retest reliability was .93 using the means of 2 trials taken on separate days. Analysis of variance for a Type II, "mixed" model and the Scheffe Multiple Comparison Test showed no significant differences for knee angles between  $135$  and  $164$  degrees ( $P = .1$ ) but these positions were significantly superior to angles between  $125^{\circ}$  and  $134^{\circ}$  which were in turn significantly superior to angles between  $115^{\circ}$  and  $124^{\circ}$  ( $P = .01$ ).

532. McPHERSON, Frances A. Development of Ideas in Physical Education in the Secondary Schools in the United States between 1889 and 1920. Ph.D. in Physical Education. 1965. 287 p. (E. A. Krug and G. L. Rarick)

The great expansion in secondary school population, increased industrialization, and shift from rural to city living shifted emphasis from education of the physical by gymnastic programs to education through the physical with additional sport and athletic programs. Secondary curricula and physical education programs expanded with redefined functions and reorganized structure. Play began to dominate physical education. World War I redirected physical education programs toward vigorous activity for physical development. Programs during the ensuing peace returned to training social, mental, and moral qualities, along with the physical, through generally play-oriented curricula.

533. OLSON, Janice Kay. The Behavior of Contiguous but Independent Joints Served in Part by Muscles Common to Both. M.S. in Physical Education. 1965. 45 p. (J. Waterland)

The problem was to determine whether cortical control permitted activation of a single joint with muscles arranged anatomically to affect more than one articulation. Four normal, healthy adult women averaged 4 trials each under 11 experimental conditions involving normal gravity, gravity eliminated, and 2 added weight conditions. Simultaneous and synchronous electrogoniometric and electromyographic records were taken from the 2 joints and 8 muscles sampled. Biplane photographs provided reference points for analyzing records. Cortical control did not seem to permit activating a single joint with biarticulate muscles.

534. REUSCHLEIN, Philip L. Pulmonary Adaptations in University Freshmen Following a Season of Endurance Training. Ph.D. in Physical Education. 1965. 203 p. (G. L. Rarick and J. Rankin)

Changes in 12 pulmonary characteristics and functions were examined in 8 freshman oarsmen following a 7-month endurance training program. Continuous measurements were taken of inspired and mixed expired  $\text{CO}$  or  $\text{CO}_2$  and  $\text{O}_2$ . Ventilation and pulse rate were also monitored during steady state exercise on a bicycle ergometer at workloads of 600, 1000, 1400, and 1800 kilopond meters per minute, or 300, 500, 700, and 900  $\text{kgm./min.}$  (1 kilopond = .5 kilogram.) The results showed no significant difference in any of the measurements at the end of the training period between the crew members and non-conditioned, healthy athletic controls. The negative findings were not construed to represent failure to achieve the trained state since the experimental subjects met accepted criteria of training at the end of the training period.

535. SCHOENINGER, Sandra Irene. A Comparison of Two Practice Patterns for Intermediate Tennis with Specific Emphasis on the Return of Serve. M.S. in Physical Education. 1965. 106 p. (M. R. Sloan)

The problems were to determine the effect on achievement in self-toss drives and returns of service of specific practice in returning serves

and other game-like practice in comparison with isolated skill practice, and to modify a self-toss drive test measuring force and angle of projection for use in evaluating the return of service. Senior high school girls (24) with 6 weeks of previous tennis instruction comprised the experimental and control groups. Pre- and posttests were given on a self-toss drive test for forehand and backhand, on a return of service test, and on the Dyer test of tennis ability. Analysis of covariance was used to determine differences between groups and changes within groups. Both treatments were equally effective in eliciting skilled performance of the drives. Marking the court or scoring the test in different ways affected the final test results.

536. WIGHTMAN, Brian J. Extracurricular Physical Activity of Entering University Freshmen During Their High School Senior Year as a Function of Social Class, Residence Location, and Size of High School Graduating Class. M.S. in Physical Education. 1965. 100 p. (G. S. Kenyon)

Freshmen males enrolling at Wisconsin in the fall of 1963 provided 1,695 (of 2,235) usable returns. Data concerning the nature of their most time-consuming extracurricular activity (recreative, calisthenic, swimming, individual or dual, and team) and frequency of participation were cross-tabulated with indexes of social class (father's occupation, income, education), rural to metropolitan residence, and size of graduating class. Choice of activity was related to social class, residence location, and size of graduating class, but frequency of participation was not related to these. Team sport was the most popular activity and calisthenics the least. The majority participated daily in some form of extracurricular physical activity; over 85 percent participated at least once a week, and under 5 percent never participated.

537. WOLTER, Carol. Comparison of Measures of the Elbow, Radioulnar and Wrist Joints for Fast, Curve, and Slow Softball Pitches. M.S. in Physical Education. 1965. 52 p. (J. Waterland)

Goniograms of joint action were made at presentation, during delivery, and at release of fast, slow, and curve pitches by 4 skilled women softball pitchers. Side view photographs provided comparison of body position at ball release, and ball velocity was recorded electronically. Positioning of the elbow and radioulnar joints were similar except in degree, while positioning of the wrist joint was more variable. The sequence of movements was not necessarily from proximal to distal. Elbow joint positioning was more similar at release than at presentation. Most radioulnar joints were supinated in fast and curve pitches, and the wrists were flexed in all but 3 pitches. Ball velocity was not directly proportional to the number of joints active at release.

538. ZIEGLER, Yvonne P. A Comparison of Two Methods of Teaching Gymnastics. M.S. in Physical Education. 1965. 125 p. (M. R. Liba)

Problem-solving and informal methods were compared using 4 classes of grade 11 girls. Each teacher taught one class by each method. The problem-solving method involved having students solve problems or tasks through exploration. The informal method involved presenting a progression of tumbling and apparatus stunts by demonstration and explanation. The groups were tested twice. The more difficult stunts were not mastered by the informal method. Quality of movement was not more highly developed in the problem-solving groups. There was no significant effect from interaction of teachers with different methods.

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(R. D. Watkins)

539. BORSZCZ, John. Analysis of the Place of Wrestling in the Physical Education Program. M. A. In Physical Education. 1965. 53 p. (W. L. Bearley)

A survey of physical educators showed that they considered wrestling to have favorable carry-over value, that it was safe, and that it should be included in the physical education program.

540. BRAUN, Mary E. The Effects of Tumbling on the Arm and Shoulder Girdle Strength of Seventh- and Eighth-Grade Girls. M. A. In Physical Education. 1965. 64 p. (R. D. Watkins)

Measurements with a dynamometer having a push-pull attachment showed that experimental groups who participated in tumbling had a significantly greater increase in arm and shoulder girdle strength than control groups that did not participate in the physical education program.

541. HELDT, Don R. An Experimental Study of the Effect of Exercise on the Strength of Selected College Football Players. M. A. In Physical Education. 1965. 74 p. (W. L. Bearley)

The players showed no significant change in strength after a period of inactivity following the end of the football season. Strength increased significantly after 7 weeks of isometric and isotonic exercise but decreased significantly after 5 weeks of spring football practice.

542. LINN, Charles E. A Study of the Desirability of the Use of Isometric Contraction Exercises in Strengthening the Shoulder Girdle Muscles of Eighth-Grade Boys Participating in Physical Education. M. A. In Physical Education. 1965. 73 p. (R. D. Watkins)

Subjects were 81 boys in grade 8 who were given 5 strength tests for the shoulder girdle before and after an 8-week program in which one group used isometric rope and bar exercises; the second group used isometric partner exercises, and the third group had the regular physical program. No significant differences were found among the groups in shoulder girdle strength.

543. LINN, Joyce E. An Investigation of the Use of Isometric Contraction Exercises for the Development of Arm Strength in Eighth-Grade Girls in a Physical Education Program. M. A. In Physical Education. 1965. 60 p. (R. D. Watkins)

Girls (N = 35) in grade 8 performed 3 isometric arm curl exercises daily for 14 weeks, and 30 girls in the same school and grade participated in regular physical education classes. Dynamometer tests of arm strength, girls' push-ups, and pull-ups showed no significant differences between the groups for the increases in arm strength.

544. MURFF, Thelma Elizabeth. An Evaluative Study of Basic Skills and Sequence of Instruction Used in Women's Beginning Archery Classes in a Selected Number of State Colleges and Universities. M. A. In Physical Education. 1965. 63 p. (R. D. Watkins)

Instructional programs in women's beginning archery were reviewed for a compilation of basic skills. These were rated and placed in sequence by a jury of experts, and a course of study was developed.

545. PHILLIPS, John R. A Study of the Policies and Regulations Governing Married High-School Pupils in Wyoming. M. A. In Physical Education. 1965. 65 p. (R. D. Watkins)

The restrictions placed on married students were classified as participation restrictions dealing with allied activities and special restrictions

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concerning physical education class participation, continued enrollment, and graduation exercises. The results showed that married students did not have any harmful effect on the educational environment.

## PERIODICALS REVIEWED

- \*Acta Chirurgica Scandinavica
- \*Acta Medica Scandinavica
- \*Acta Orthopaedica Scandinavica
- \*Acta Paediatrica Scandinavica
- \*Acta Physiologica Polonica
- \*Acta Physiologica Scandinavica
- \*Aerospace Medical Research Laboratories Report
- \*Aerospace Medicine
- \*American Heart Journal
- American Journal of Anatomy
- \*American Journal of Cardiology
- \*American Journal of Clinical Nutrition
- \*American Journal of Epidemiology
- American Journal of Human Genetics
- \*American Journal of the Medical Sciences
- American Journal of Medicine
- American Journal of Orthopsychiatry
- American Journal of Physical Anthropology
- American Journal of Physical Medicine
- American Journal of Physiology
- \*American Journal of Psychiatry
- American Journal of Psychology
- \*American Journal of Public Health and the Nation's Health
- American Journal of Surgery
- \*American Review of Respiratory Diseases
- Anatomical Record
- Annals of Applied Biology
- Annals of Human Genetics
- \*Annals of Internal Medicine
- Annals of Physical Medicine
- Archives of Environmental Health
- Archives of Internal Medicine
- \*Archives of Physical Medicine and Rehabilitation
- Archives of Surgery
- \*Arctic Aeromedical Laboratory Report
- \*Australasian Journal of Experimental Biology and Medical Science
- \*British Heart Journal
- \*British Journal of Industrial Medicine
- \*British Journal of Medical Psychology
- British Journal of Nutrition
- British Journal of Preventive and Social Medicine
- British Journal of Psychiatry (Journal of Mental Science)
- British Medical Bulletin
- \*British Medical Journal
- \*Bulletin of the Johns Hopkins Hospital
- Bulletin of the Los Angeles Neurological Society
- California Clinician
- California Journal of Educational Research
- California Medicine
- \*Canadian Journal of Pharmacology and Physiology
- Canadian Journal of Psychology
- \*Canadian Journal of Public Health
- Cancer Research
- \*Child Development
- \*Circulation
- Circulation Research
- \*Clinical Science
- Danish Medical Bulletin
- \*Defense Chemical Biological and Radiation Laboratories Report
- \*Diabetes
- Educational and Psychological Measurements
- \*Environmental Health
- \*Ergonomics
- Experimental Cell Research
- Federal Aviation Agency Report
- Federation Proceedings
- Genetic Psychology Monographs
- \*Geriatrics
- GP
- \*Growth
- \*Human Biology
- \*Indian Journal of Medical Research
- \*Industrial Medicine and Surgery
- \*International Journal of Health Education
- \*International Journal of Social Psychology
- \*Internationale Zeitschrift für Angewandte Physiologie
- Journal of Abnormal Psychology

Periodicals marked with an asterisk have research reports listed in this issue of Completed Research.



- \*Journal of the American Dietetic Association
- \*Journal of the American Medical Association
- \*Journal of Anatomy
- \*Journal of Applied Physiology
- \*Journal of Applied Psychology
- \*Journal of the Association for Physical and Mental Rehabilitation
- \*Journal of Bone and Joint Surgery
- \*Journal of Chronic Diseases
- \*Journal of Clinical Investigation
- \*Journal of Clinical Psychology
- \*Journal of Comparative and Physiological Psychology
- \*Journal of Educational Psychology
- \*Journal of Educational Research
- \*Journal of Experimental Biology
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- \*Journal of Nervous and Mental Disease
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- \*Journal of Social Psychology
- \*Journal of Sports Medicine and Physical Fitness
- \*Journal of Teacher Education
- \*Journal of Tropical Medicine
- \*Lancet
- \*Mental Hygiene
- \*Military Medicine
- \*National Conference of Social Work
- \*Nation's Schools
- \*Naval Medical Field Research Laboratory Report
- \*Naval Medical Research Institute Research Report
- \*New England Journal of Medicine
- \*New York State Journal of Medicine
- \*Nutrition Abstracts and Reviews
- \*Nutrition Reviews
- \*Office of Naval Research Report
- \*Pacific Medicine and Surgery
- \*Parks and Recreation
- \*Pediatrics
- \*Perceptual and Motor Skills
- \*Phi Delta Kappan
- \*Physical Educator
- \*Physical Therapy
- \*Physiological Reviews
- \*Postgraduate Medicine
- \*Proceedings of the Society for Experimental Biology and Medicine
- \*Psychoanalysis and Psychoanalytic Review
- \*Psychological Bulletin
- \*Psychological Monographs
- \*General and Applied
- \*Psychological Reviews
- \*Psychosomatic Medicine
- \*Public Health Reports
- \*Quarterly Journal of Experimental Physiology and Cognate Medical Sciences
- \*Quarterly Journal of Experimental Psychology
- \*Quarterly Review of Biology
- \*Recreation
- \*Rehabilitation Record
- \*Research Bulletin of the NEA
- \*Research Quarterly, AAHPER
- \*Revue Canadienne de Biologie
- \*Royal Society of Health Journal
- \*Safety Education
- \*Scandinavian Journal of Clinical and Laboratory Investigation
- \*School of Aerospace Medicine
- \*School Review
- \*Science
- \*Sociological Abstracts
- \*Sociological Review
- \*Sociology and Social Research
- \*Sociometry
- \*South African Journal of Medical Science
- \*Southern Medical Journal
- \*Surgery
- \*Swimming Pool Age
- \*Swimming World
- \*USAF School of Aerospace Medicine Report
- \*U. S. Army Natick Laboratories Technical Report
- \*U. S. Naval School of Aviation Medicine Report
- \*United States Navy Medical Newsletter

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